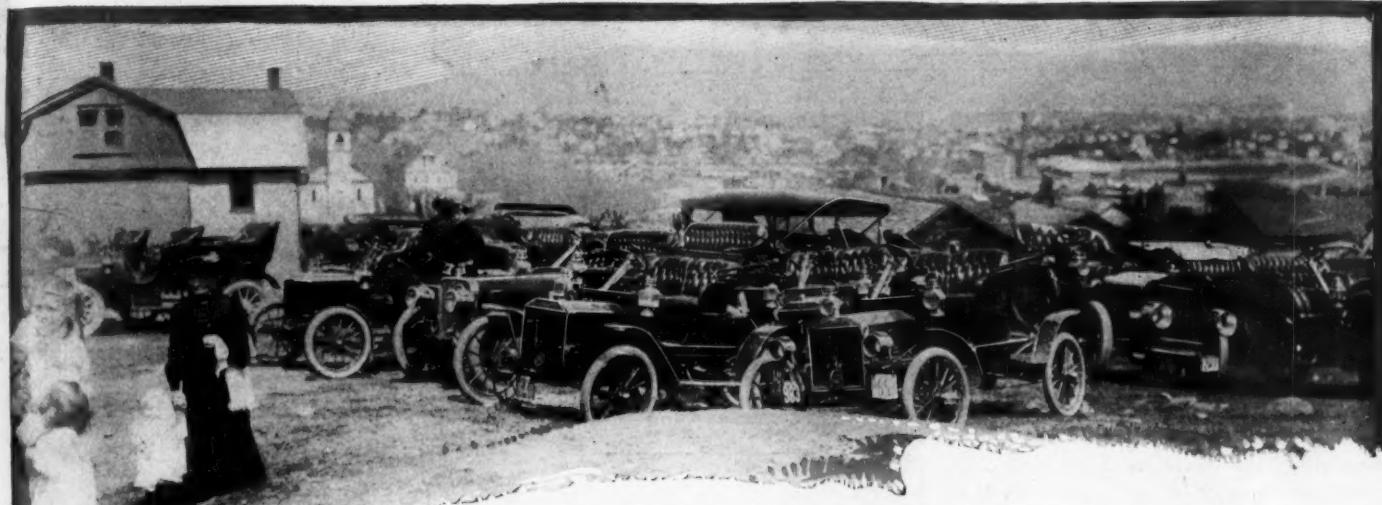


# MOTOR AGE

## WHITE SHATTERS GIANT'S DESPAIR RECORD



CROWD OF CARS GATHERED FOR GIANT'S DESPAIR HILL CLIMB

WILKES-BARRE, PA., May 30—With a swift, stealthy dash, in marked contrast with the raucous, roaring rush of its gasoline rivals, Walter C. White's 30-horsepower White steamer today shattered the sorely smitten Giant Despair's record and placed it at a point which would seem to insure its remaining there for several years at least. To accomplish this feat White took all sorts of chances. Earlier in the day, in a similar trial, his car had met with a mishap near the summit of the mountain and had been ingloriously pushed to the finish by a score of spectators. Just before the last event of the day White requested permission to make another trial, which was granted by the officials in charge.

Starting a few yards beyond the tracks of the New Jersey Central railroad, about 150 yards behind the tape, the car, which resembles Whistling Billy, bounded down to the mark amid a cloud of steam. As it crossed the tape Starter Wagner's gun gave Assistant Callahan the official start, and simultaneously the signal was flashed to the finish by the electric timer. Then

came Callahan's sing-song voice as he transmitted the news of the progress of the trial as it was given to him over the 'phone. "At the Elbow—very fast." A short pause. "Mountain House—very fast." Another pause. "Prospect Rock—VERY fast." Then while the bunch of officials congregated on the porch of the little two-story wooden shanty in Laurel Run, crowded round in expectant anticipation, Callahan shouts: "What's that? Give me that again. One-forty-nine-and-four-fifths." And then Bedlam broke loose.

There is a story back of the White's record which accounts in great measure for the determination of its driver to do or die. Mr. White told the Motor Age reporter that the White cars were prepared particularly for the free-for-all, and had arrived early in the week to tune up the cars and enable him to get acquainted with the course. In a round-about way he heard that steamers were to be barred, and later his entrance fees—\$15—were returned to him.

Mr. White was fighting mad when he went to bed Wednesday night, but was early on the hill next morning. The committee, however, was obdurate. He was not allowed to start in the free-for-all, the committee falling back on its privilege, as

announced on the entry blanks, of "rejecting any entry." The contest committee of the Quaker City Motor Club, although it would have been glad to allow Mr. White to compete in its events—he is a member of that club—was compelled to refuse him the privilege, for the reason it had been previously agreed no car would be eligible that had not been driven up from Philadelphia in the club run the day before. The Quakers were not afraid of steam, for Stanleys which were on the run competed in both events—and won one of them under 2 minutes. White declared he would not compete in a special steam class; that such a class had not been on the blank on which he sent in his entries; that the committee had no authority to put his cars in that event in the program. The only way out of the tangle was to give him an official time trial. The first was a fizzle. The committee graciously accorded him another. And he clipped 21½ seconds off the last year's record of the English Daimler and was under the best gasoline time today by 9¾ seconds.

But fast as was the White's time, it was not the fastest of the day. The Giant's Despair record really belongs to Will Wray, whose 6-horsepower Simplex-Peugeot motor cycle took him to the top of the mountain in 1 minute 40 seconds!



MAXWELL FOUR ON THE HILL

The fight for the gasoline record was a most interesting one. After the Stanley steamer had captured the honor of first negotiating the 6,000-foot rise under 2 minutes—1:56½—in the Quaker City runabout class, the 25-horsepower Pope-Hartford made the first gasoline cut by doing 2 minutes 5½ seconds in the fifth event. Then the Great Chadwick six in the ninth event went the route in 2 minutes 2½ seconds, and finally in the free-for-all, the last event on the program, Roberts in his 60-horsepower Thomas Flyer cut under these figures to 2 minutes 1½ seconds, and on the very next trial Ryall drove his last year's Vanderbilt cup Matheson to the gasoline course record of 1 minute 59½ seconds which stood.

The feature of the meet which speaks volumes for the improvement in American cars was the fact that no less than thirteen of the trials were under last year's record of 2:11½. Of course some of this improvement in time was due to the changes made in the course—the elimination of water breaks, widening of turns, etc.; but the cuts were too deep and too frequent to be ascribed to anything other than a general betterment of American cars.

A fair idea of the advance the year has brought about can be had from the following comparison of the best figures in the respective classes:

	1906	1907
Free-for-all .....	2:16 1-5	1:59 2-5
Stock cars over \$5,000 .....	2:11 1-5	2:07
Stock cars under \$5,500 .....	2:27	2:02 2-5
Stock cars under \$4,000 .....	3:18 1-5	2:05 4-5
Stock cars under \$2,500 .....	2:56 4-5	2:31 1-5
Stock cars under \$1,000 .....	3:10 1-5	2:47
Course record .....	2:11 1-5	1:49 4-5

A better day for the American hill-climbing Derby could not have been made to order. On top of the mountain it was just cool enough to suggest early fall, but a bright sun tempered the rather brisk wind. Every point of vantage along the more-than-a-mile course was occupied by



CROWD SEES THE RAMBLER AT WORK

spectators, conservative estimates placing the crowd at about 30,000. Many of them had brought their lunch, for the papers had told them that it would be a 7-hour session—it really consumed 6 hours 30 minutes to run off the more than three score trials. Several enterprising churches had established huge refreshment booths and turned an honest penny to be devoted, possibly, to the heathen in foreign lands.

Telephones were installed at five places on the course—the start, Devil's Elbow, Mountain house, Prospect rock and finish—and at each point an announcer kept the crowds informed of the time of each trial, the number of the next car to essay the climb, etc. The arrangements were excellent, and that not a single accident marred the day's sport speaks well of the thoroughness of the committee's work. The cars in each event were kept at the top of the hill until all in the class had made the climb, and then were ordered to the foot of the mountain—the winners, seconds and thirds being supplied at the top with blue, red and white pennants, respectively.

The Fairmount Engineering Works sprung quite a surprise with their Great Chadwick six, which William Haupt drove

to a win in the first two events in which it started, beating the Thomas Flyer and Guy Vaughn's Stearns in the \$5,500 and under stock car class, and two Mathesons and a Fiat in the high-priced class. In the free-for-all the Thomas and the Matheson turned the tables on it, although the latter was last year's Vanderbilt cup car, and the victory of the racer over the stripped touring car was expected. The Chadwick's three trials of 2 minutes 2½ seconds, 2 minutes 7 seconds and 2 minutes 5½ seconds were second only in the matter of average to the Thomas' 2 minutes 5½ seconds, 2 minutes 6¾ seconds

and 2 minutes 1½ seconds.

Another excellent showing was that of the Stearns, which, with C. W. Hoffman at the wheel, annexed the all-price stock touring car class and the Quaker City touring car class honors in brilliant fashion in the fast times of 2 minutes 16½ seconds and 2 minutes 13½ seconds. But an even more creditable showing was that of the Pope-Hartford driven by J. P. Grady, which despite its 25 horsepower, beat out the 60-horsepower Thomas Flyer, the 35-40-horsepower Rambler, the 35-40-horsepower Oldsmobile, the 35-horsepower Pennsylvania and other higher-powered cars in the under \$4,000 stock car class in 2 minutes 5½ seconds. Later the same car captured fourth place in the free-for-all with a mark of 2 minutes 6½ seconds.

Another consistent performer was the Maxwell. That car captured the under \$1,000 stock car honors, finished second in the class for stock cars costing \$2,500 and under, and made a good showing in the free-for-all, despite its small horsepower. D. Walter Harper's Stanley runabout gave an early indication of steamer possibilities in hill-climbing stunts when it captured the Quaker City runabout class in 1 minute

There was one disqualification—in the event for stock cars costing \$1,000, won by Grant. He was protested by Koehler, who claimed the Maxwell car was a special racer and not a stock car. Referee C. B. Roberts allowed the protest and placed the Buick second. Summaries:

## Motor cycles, free-for-all—

Name	H. P.	Driver	Time
Simplex-Peugeot	6	Wray	1:40
Indian twin cyl.	5	Hedstrom	2:01
Indian	4	McLaughlin	2:18

Quaker City runabout class, for members of Quaker City Motor Club only—

Car	H. P.	Driver	Time
Stanley runabout	20	Harper	1:56 4-5
Oldsmobile	35-40	Berger	2:47 4-5
Stoddard-Dayton	30-35	Leinbach	2:52 3-5
Maxwell	14	Fleming	3:18 2-5
Pennsylvania	35	Zengle	Stalled

Stock cars costing \$1,000 and under; former record, 3:10 1-5, held by 22-horsepower Buick—

Car	H. P.	Driver	Time
Maxwell	22	Grant	2:47
Maxwell	14	Fleming	3:07
Buick, 1906 G...	22	Koehler	3:18 3-5

## \*Disqualified

Stock cars costing \$2,500 and under; former record, 2:56 4-5, held by 24-horsepower Pope-Toledo—

Car	H. P.	Driver	Time
Corbin	24	Hutchinson	2:31 3-5
Maxwell	14	Fleming	2:38
Knox	30	Bourque	2:41 1-5
Stoddard-Dayton	30-35	Ireland	2:45 4-5
Stoddard-Dayton	30-35	Leinbach	2:47 4-5
Stoddard-Dayton	30-35	Headly	2:51 1-5
Rambler	35-40	Bittner	3:05 4-5
Buick	22	Koehler	3:06 2-5
Mitchell	35	Greenawalt	4:14
Ford	14	Jones	4:30
Dragon	24	Haynes	4:43 4-5

Thomas Flyer	60	Roberts	2:06 3-5
Knox	30	Bourque	2:37 2-5
Pennsylvania	35	Zengle	2:46 2-5
Stoddard-Dayton	30-35	Leinbach	2:47 4-5
Stoddard-Dayton	30-35	Headly	2:57 3-5
Buick	22	Koehler	3:01 4-5
Rambler	35-40	Bittner	3:07 3-5
Autocar	30	Brown	3:22 2-5
Oldsmobile	35-40	Berger	3:44

Stock cars costing \$5,500 and under; former record, 2:27, held by 50-horsepower Stevens-Duryea—

Car	H. P.	Driver	Time
Gt. Chadwick Six	50	Haupt	2:02 2-5
Thomas Flyer	60	Roberts	2:05 2-5
Stearns	45	Vaughn	Stalled

Stock cars costing over \$5,000; former record, 2:11 1-5, held by 45-horsepower English Daimler—

Car	H. P.	Driver	Time
Gt. Chadwick Six	50	Haupt	2:07
Matheson	60	Ward	2:19
Matheson	45-50	Anderson	2:24 4-5
Flat	35	Kessler	2:35 4-5

Time trials for course record, 2:11 1-5, held by 45-horsepower English Daimler—

Car	H. P.	Driver	Time
White	30	White	Stalled
White	30	White	1:49 4-5

Free-for-all, stripped and racing cars; former record, 2:16 1-5, held by 45-horsepower English Daimler—

Car	H. P.	Driver	Time
Matheson	60	Ryall	1:59 2-5
Thomas Flyer	60	Roberts	2:01 1-5
Gt. Chadwick Six	50	Haupt	2:05 3-5
Pope-Hartford	25	Grady	2:06 4-5
Matheson	60	Ward	2:18 4-5
Matheson	60	Anderson	2:28 1-5
Maxwell	22	Offenhauser	2:53 4-5
Maxwell	14	Fleming	3:03 2-5

## TWO RACES FOR THOMAS

Washington, D. C., May 31—Four thousand Washingtonians journeyed out to the

Benning race track on Decoration day to see some racing given under the auspices of the newly-formed United States Motor Racing Association. While only two motor car events and a motor cycle race were pulled off the spectators got the worth of their money in the 100-mile race, which was won by W. C. Hood, driving a 60-horsepower Thomas, in 2 hours 12 minutes 43 seconds, establishing a new world's record for the distance on a circular mile track. The former record was 2 hours 18 minutes, made in Chicago on July 4, 1906. Later in the day, however, advices from Readsville, Mass., stated that the Oldsmobile had done the century that afternoon in 2 hours 10 minutes 30 seconds. When Starter "Booker" Washington gave the word the following were lined up at the tape: R. Mongini, 30-horsepower Columbia; Mrs. Cuneo, 45-horsepower Rainier; Howard Gill, Thomas Forty; John Lutz, 35-40-horsepower Oldsmobile; J. Conway, 50-horsepower Thomas; A. L. McCormick, 35-40-horsepower Oldsmobile. Hood took the lead from the start, closely followed by Conway. The latter hung on gamely for 50 miles, then began to have troubles. McCormick and Lutz were right there all the time and managed to finish second and third, respectively, McCormick's time being 2 hours 22 minutes 1 second, and Lutz's 2 hours 26 minutes 8 seconds; Mongini was fourth, Gill in the Thomas Forty retiring at the end of the forty-fifth mile. The other motor car event, the 10-mile district championship for roadsters of 60 horsepower and under, was also won by Hood in the 60-horsepower Thomas in 6 minutes 28 seconds, with Conway in the 50-horsepower Thomas second and Gill in the Thomas Forty third. The motor cycle race at 3 miles was won by Mangol on an Indian in 4 minutes 11 seconds; W. F. Troupe was second on a Davidson.



WHITE STEAMER ON RECORD STUNT

Jackson ..... 24 Boswell ..... 5:32 2-5  
Maxwell ..... 22 Offenhauser ..... Stalled

Stock touring cars, all prices and horsepower, completely equipped as catalogued, except muffler, top and glass front. Cars carried stock touring body complete, including regular tonneau or rear seats, also fenders, steps, running boards, lamps, horn, mats, etc.—

Car	H. P.	Driver	Time
Stearns	30	Hoffman	2:16 4-5
Stearns	30	Vaughn	2:19 2-5
Pope-Hartford	25	Grady	2:39 4-5
Flat	35	Kessler	2:49

Quaker City touring car class, for members of Quaker City Motor Club only—

Car	H. P.	Driver	Time
Stearns	30	Hoffman	2:13 2-5
Stanley tour. car	20	Harper	2:31
Autocar	30	Brown	3:10
Mitchell	35	Greenawalt	4:29 3-5

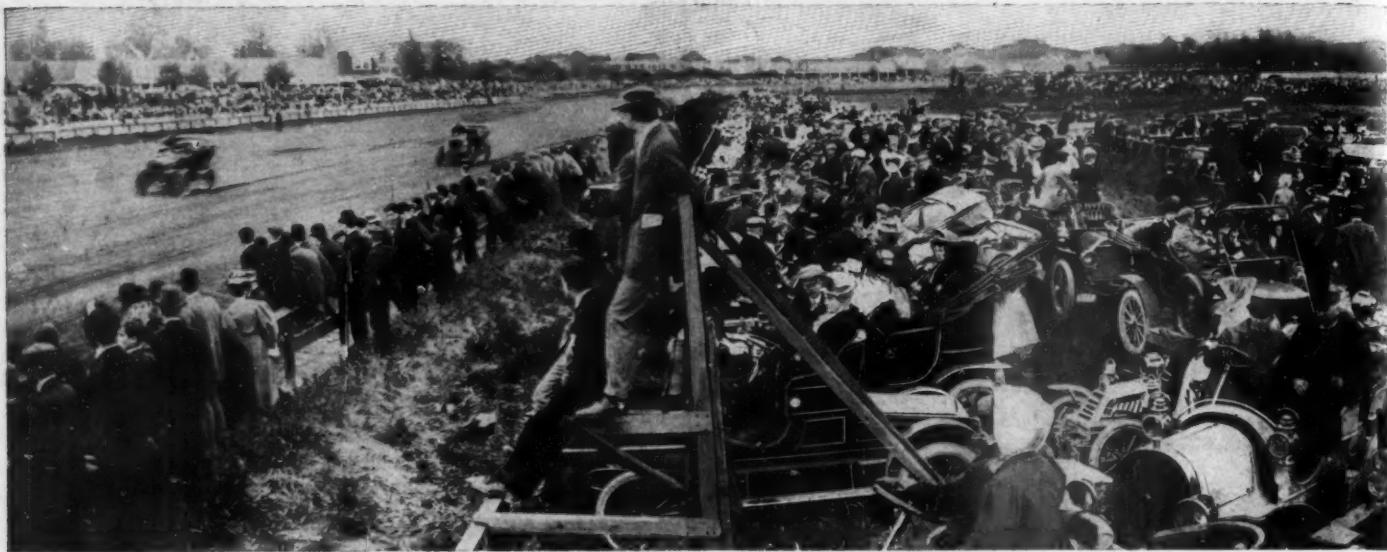
Stock cars costing \$4,000 and under; former record, 3:18 1-5, held by 35-horsepower Rambler—

Car	H. P.	Driver	Time
Pope-Hartford	25	Hardy	2:05 4-5



BIG CROWD ASSEMBLED AT THE STARTING POINT OF HILL-CLIMB

## OLDSMOBILES BREAK RECORDS AT READVILLE



WATCHING THE RECORD-BREAKERS IN THE 100-MILE RACE AT READVILLE

BOSTON, MASS., June 5—William Falberth, driving a 35-horsepower Oldsmobile, established a new world's record for touring cars at 100 miles on the Readville track here on the holiday last week by doing the distance in 2 hours 10 minutes 30 seconds. This beats the record of 2 hours 18 minutes made a year ago at Chicago. Fred Allen, driving a 35-horsepower Oldsmobile runabout, won the 50-mile race for that class and as it was practically the first event of its kind for those vehicles it also establishes a record for him also. The long race grew monotonous before it was half over. When Falberth took the lead in the thirty-first mile he was never headed.

There were eight starters in the race and they got away well together. Morrison, driving a Stearns, began to get away from the others and at the 10-mile mark had opened up a lead of a quarter mile. This he increased to a half by the time the race was 25 miles along. His car was showing fine speed until after going 30 miles a tire rolled off one of the rear wheels and he lost 10 minutes. This gave the others a good chance to cut away from him and it practically put him out of the running so far as prizes were concerned, for he had some other troubles later on that held him back after he had cut down some of the lead the others had on him.

Harry Murch in a Cadillac got second place after a good fight with Falberth. He had some troubles with tires that lost him several miles. Fred Lewis in a Frayer-Miller pegged it out and managed to land third place. Falberth never had

a bit of trouble the entire distance. Blake in a Jackson and Liffike in a Dragon performed consistently all the time. Nielsen in a Moon gave the spectators some surprising bursts of speed and with anything like ordinary luck he would have been in the first division.

There were eleven starters in the 50-mile for runabouts. This proved the race of the day. There was some controversy about a Stanley steamer starting. First one of the officials said it would start and another said it would not. So the spectators were left in doubt until the last minute. The truth of the matter was that the steamer had the officials scared. It was not on the program, but when the cars lined up it was there with the rest. But it proved a disappointment. In the trials the day before the race it went the miles at a 1-minute-5-seconds clip. But in the first mile it had some trouble and in the second its pilot light went out. When it got going again the leaders had 5 miles of a lead on it. Twice later it had to stop and those two delays served to altogether

put it out of the running for a prize.

A Jackson car driven by Burnham seemed the likely winner. It took the lead early in the race and sped around at a terrific clip, opening a lead of nearly half a mile on the Oldsmobile by the time the race was half over. But its woes came in the next few miles and it had to stop a couple of times and that ended it. An American driven by Frederies got second in this event, with a Royal Tourist running into third place.

There has been some kicking about the placing of the cars in the 100-mile event. The Dragon people claim that they are entitled to fourth place. Some of the spectators who kept tabs on the race figured it out that the Frayer-Miller covered 102 miles before it was stopped. The standing of the cars when the Oldsmobile flashed across the tape a winner had the Dragon in fifth place then. There were some criticisms because the other cars were allowed to plug along, thereby delaying the start of the runabouts until 5 o'clock. When Falberth had completed his 100 miles Murch was on his 96, the Frayer-Miller had done 87, the Grout had finished 82, the Dragon 80, Stearns 79, Jackson 75 and Moon 73. The events were run on a sort of percentage plan, the Bay State Club and one of the track men dividing the proceeds and caring for expenses. The club probably will make a good bit of money out of it. There was a good attendance at the track and that the promoters made a hit by cutting out sprints and only carding two long-distance events was shown by the interest the specta-



ALLEN'S OLDSMOBILE, WINNER READVILLE 50-MILE RACE

cars displayed in the two contests that were pulled off. Never was there a dull moment and even in the century grind the crowd did not get impatient. Summary:

100-mile race—Thirty-five-horsepower Oldsmobile, W. Falberth, won, time 2:10; 30-horsepower Cadillac, H. Murch, second, time 2:16:55 1-5; 50-horsepower Frayer-Miller, F. A. Lewis, third, time 2:31:30 1-5. Also competed: 35-horsepower Grout, 24-horsepower Dragon, 30-horsepower Stearns, 20-24-horsepower Jackson, 30-35-horsepower Moon. Intermediate times of winning car—25 miles, 32:10 2-5; 50 miles, 1:09:05 2-5; 75 miles, 1:37:48 4-5; 100 miles, 2:10:30.

Fifty-mile race for roadsters—Thirty-five-horsepower Oldsmobile, Fred Allen, won, time 1:03:24; 40-horsepower American, W. A. Frederick, second, time 1:04:45 4-5; 40-horsepower Royal Tourist, H. D. Church, third, time 1:08:52 1-5. Also competed: 25-horsepower Stanley, 40-45-horsepower Jackson, 24-horsepower Corbin, 35-horsepower Grout, 45-horsepower Crawford, 30-horsepower Knox, 24-horsepower Dragon, Logan. Intermediate times of winning car—5 miles, 6:48; 10 miles, 13:08 2-5; 15 miles, 19:35 3-5; 20 miles, 25:49 1-5; 25 miles, 32:04; 30 miles, 38:07 2-5; 35 miles, 44:28; 40 miles, 50:58 2-5; 45 miles, 57:09 4-5; 50 miles, 1:03:24.

#### TRACY IN FAST CLIMB

Bridgeport, Conn., June 5—The Automobile Club of Bridgeport held a hill-climb here on Memorial day which afforded lots of amusement for a large crowd which watched the cars climbing Sport hill. There were two narrow escapes from serious accidents during the climb. Arthur Warren, driving a 30-horsepower Stearns, struck a stone wall and the driver was thrown several feet, and Harry Seymour, of the Pope company in a Pope-Hartford plunged into a ditch, leaped the other side and struck a telephone pole. Both drivers were severely bruised but they had no bones broken. The meet was the largest of its kind ever held in Connecticut and good time was made. A. L. Riker, of the Locomobile company, was referee. Joe Tracy, of Vanderbilt and Bennett fame, driving a 1908 Locomobile, was tied for first place with C. S. Bragg, a Yale student, in the free-for-all. Mr. Riker withdrew the Loco-



FALBERTH WINNING THE CENTURY

mobile then because being referee and also an official of the Locomobile company he thought it was better sportsmanship. His action was favorably commented upon by the contestants. There arose some question as to the eligibility of Bragg to get the Yale cup on the ground of his amateur standing and it was referred to the A. A. A. for final settlement. Reo, Pope-Hartford, Simplex and Stanley cars took the first prizes. The summary:

Class A, stock cars up to \$1,000—		
Car	H. P.	Entrant
Maxwell	12	Maxwell-B. Co.
	15	Sperry
		2:06
		2:18
Class B, stock cars from \$1,000 to \$2,000—		
Car	H. P.	Entrant
Reo	16	Gates
	20	
		2:19
		2:27
Jackson	20	Bell
		2:30

**EDITOR'S NOTE**—Claim is made by the Continental Auto Mfg. Co. that its car driven by C. S. Johnston in class C made the second best time, winning over an Oldsmobile and Columbia and tying the score made by another entry. It also claims to have done 1 minute 52 seconds in the free-for-all. Motor Age's correspondent does not so report.

Class C, stock cars from \$2,000 to \$3,000—

Car	H. P.	Entrant	Time
Pope-Hartford	25-30	Seymour	1:49
Oldsmobile	40	Lyford Bros.	2:12

Class D, stock cars over \$3,000—

Car	H. P.	Entrant	Time
Simplex	75	Bishop	1:37 3-5

Packard	30	Pearsall	1:41 3-5
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Packard	30	Garage Co.	1:46
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Class C, free-for-all, cars and runabouts up to \$5,000—

Car	H. P.	Entrant	Time
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*Locomobile	40	Tracy	1:24 2-5
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Stanley	20	Bragg	1:24 2-5
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Stevens-Duryea	50	Crawford	1:32 3-5
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Oldsmobile	40	Burrall	1:36
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\*Exhibition.

Class D, motor cycles—

Machine	H. P.	Entrant	Time
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Indian	2 1/2	Cox	1:30
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Curtis	5	Clarke	1:31 1-5
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Indian	4 1/2	Johnson	1:36 2-5
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#### CHICAGO'S MATINEE EFFORT

Chicago, June 1—In the way of a motor-ing outing on Memorial day local motorists drove 40 miles to Libertyville, where a poor card of events was run off. The meeting was hurriedly arranged and in consequence there was a lack of system in running the races. The sport was late in starting, most of the fields were spoiled by scratches and finally the afternoon's card brought to a sudden end, largely because of a free-for-all fight on the track, caused by the actions of several drunken youths who sought to run things to suit themselves. Only three of the six races were contested. In the first one, in the heat for touring cars listing at from \$1,000 to \$3,000, Otis Friend in a Wayne defeated the Pierce-Racine and C. F. C. A. Coey in a Thomas won the second heat for cars listing at \$3,200 to \$4,200, defeating Heineman in a Stevens-Duryea "little six." The third heat was abandoned because a Stevens-Duryea "big six" was the only one to come to the tape. Otto Lehman in a Packard won the roadster race, defeating an American and a Thomas. Lehman also took the New Southern cup.



JOE TRACY CLIMBING SPORT HILL AT BRIDGEPORT, CONN., IN DECORATION DAY CONTESTS IN 1908 LOCOMOBILE

## TEN TIE IN LONG ISLAND ENDURANCE RUN



KIRKHAM IN HIS MAXWELL IN COUNTRY AROUND BRIDGEHAMPTON

**N**EW YORK, June 1—A Glidden tour in miniature was run by the Long Island Automobile Club May 30-31 and as a result five silver trophies are in dispute with ten claimants for them, owing to that many competitors forming a tie with perfect scores. The affair was run on Long Island, 139 miles on Thursday and 154.6 miles on Friday, with the cars carrying observers and having to check at several controls. There was a minimum average of pace set for the cars of each class, but no maximum, and while a penalty was fixed for the offense of being more than 15 minutes late, there was none for being ahead of time. Naturally, the affair was a scorcher. The observers were appointed to report all stops, adjustments and repairs. The rules fixed point penalties for the cost of parts used in replacement and for the time spent in making them, but there was no penalty for adjustments, for tire repairs or replenishments of supplies. There was a supplementary rule stipulating that in case of a tie the stops made for adjustments would be considered. Nearly all the cars had clean scores, so far as being on schedule time and having made no replacements were concerned, so the committee had to fall back on the exigency rule of considering adjustments. Even after using this for all it was worth there remained a tie between some cars in each class and the end is not yet.

Under the rules the cars were divided into three classes: Class A, for cars costing up to \$1,500; class B, for cars costing from \$1,500 to \$3,000; class C, for cars costing \$3,000 and more. There were twenty-two entries, mostly from the trade, and twenty cars started. They were sent away by classes from the house of the Long Island Automobile Club, in Brooklyn, the first car getting away at 7:07 o'clock Thursday morning. The starters, in the order of their going, were:

Class A—W. T. Hunt, 10-horsepower Holman; Joseph D. Rourke, 10-horsepower Cadillac; I. C. Kirkham, 16-horsepower Maxwell.

Class B—A. D. Corwin, 28-horsepower Queen; W. H. Bowers, 40-horsepower Thomas; Frank Rockliffe, 40-horsepower Aerocar; E. H. Barnum, 28-horsepower Columbia; Roy E. Pardee, 35-horsepower Olds; C. G. Arnold, 25-horsepower Pope-Hartford; John Sieber, 30-

horsepower Haynes; R. G. Howell, 20-horsepower Franklin; A. M. Robbins, 40-horsepower Aerocar.

Class C—Charles Beach, 50-horsepower De Luxe; R. G. Kelsey, 40-horsepower Matheson; S. H. Burns, 30-horsepower Packard; A. N. Wilcox, 30-horsepower Pope-Toledo; Alonzo B. Coles, 40-horsepower Pierce Arrow; C. R. Smith, 60-horsepower Dolson; L. H. Perlman, 50-horsepower Welch; C. A. Carlson, 40-horsepower Winton.

The prizes offered were a silver trophy for the winner in each class, one for the car entered by a manufacturer or agent and having the best score, irrespective of class, and one for the car entered and driven by an amateur having the best score irrespective of class. Despite the fact of there being many ties at the finish the contest was the best managed affair ever run by the Long Island Automobile Club and it satisfied many who were unacquainted with Long Island that it is a territory perfectly satisfactory for contests of 200 or 300 miles or even more, if only touring conditions were desired and there was no objection to retracing the same roads. The run was out on the north side of the island to its eastern extremity the first day, then across and back on the south side the second day. The north side is rolling country all the way, with some hills that compel the best of them to shift their gears. There are good roads most of the way, but there also are miles of narrow dirt roads and some very sandy spots. The south side is nearly level and good roads predominate. The scenery is magnificent and those to whom

it was new remarked that there is no need to wander through several states in order to find all the varieties of conditions for a test and beautiful scenery. What seemed to be lacking in this endurance run was rules to fit the conditions. This lack was partly excusable probably on the ground given by one man that motor cars have improved so rapidly that it is puzzling to make rules that will evolve winners in an endurance run.

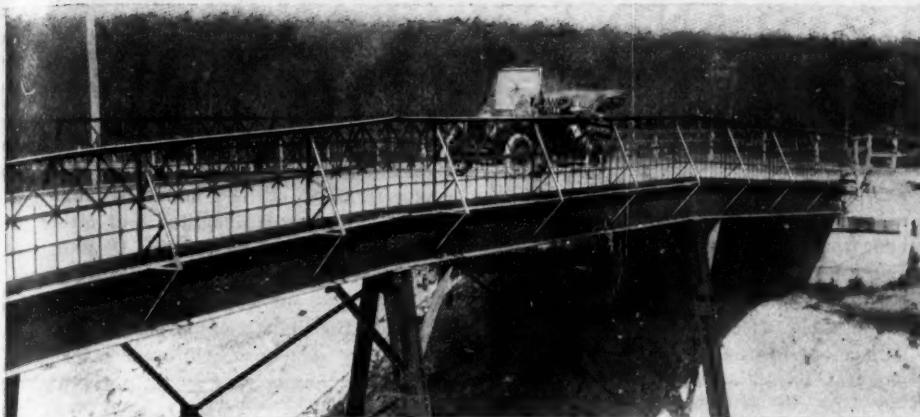
Nineteen of the twenty starters reached the noon control at Greenport on the first day, the missing car being a 40-horsepower Aerocar entered by E. Storms, Jr., the Brooklyn agent. Frank Rockliffe, who was driving the car, went flying down a hill, then threw in the clutch suddenly at the bottom and ditched the car to avoid running down a buggy. Something had to give under such treatment and it was the transmission. It is one of Storm's boasts that no Aerocar is ever laid up more than 24 hours. The accident occurred at 10 a. m. By 8 p. m. he had obtained new parts and was under way again and he rejoined the tourists the next morning.

The Pope-Hartford won the chief glory for fast time, it being the first to check at all the controls and first to finish. On the second day it made the run of 96.6 miles from the noon stop to the clubhouse in 3 hours. At Greenport, where the night was spent, the contestants had a taste of Glidden tour treatment. The Griffing house, a typical country hotel, raised its rates from \$2 to \$3 a day especially for the tourists. When A. M. Robbins, the New York manager of the Aerocar branch, protested he was in effect told to go to, that the proprietor didn't care about the motorists and they could keep away from there if they didn't like it. Further, he said that he had arranged with Charles Jerome Edwards, chairman of the Long Island Club's contest committee, to charge the advanced rate. It was thoroughly Gliddenish and there was a scene in front of the garage that was strongly reminiscent of Three Rivers, Canada.

On the second day the 30-horsepower



EDWARD'S CADILLAC ENTERING A CONTROL IN LONG ISLAND ENDURANCE RUN



BRIDGE OVER PICTURESQUE STREAM ON LONG ISLAND COURSE

Haynes of John Sieber skidded into a post and was well smashed. This was the only car of those that left Greenport which did not finish, the other eighteen getting in before dark. Friday's run was from Greenport to Riverhead, then over to East Quoyne, on the south side, through the Shinnecock hills to Bridgehampton, then back through the hills again, with a noon stop there and after that straight on to Brooklyn over fine level roads, a total for the day of 154.6 miles. The cars that are declared tied for the class prizes are:

Class A—Joseph A. Rourk's 10-horsepower Cadillac and I. C. Kirkham's 16-horsepower Maxwell.

Class B—E. H. Barnum's 24-28-horsepower Columbia, Roy E. Pardee's 35-horsepower Olds and C. G. Arnold's 25-30-horsepower Pope-Hartford.

Class C—A. B. Coles' 40-45-horsepower Pierce Arrow, S. H. Burns' 30-horsepower Packard, A. N. Wilcox's 50-horsepower Pope-Toledo, C. A. Carlson's 40-horsepower Winton and R. G. Kelsey's 40-horsepower Matheson.

The charges laid by the observers against the other cars were: W. H. Bowers' Thomas Forty, taking engine apart; A. M. Robbins' 40-horsepower Aerocar, carbonization in the waterjacket; R. G. Howell's 20-horsepower Franklin, broken fan; A. D. Corwin's 28-30-horsepower Queen, adjusting carburetor; W. T. Hunt's 10-horsepower Holsman, carburetor adjustment; Charles Beach's 50-horsepower De Luxe, carburetor adjustment; C. R. Smith's 60-horsepower Dolson, carburetor adjustment; L. H. Perlman's 50-horsepower Wlch, broken pin in oiler. So far no decision has been made regarding the disposition of the five prizes which are claimed by the owners of the ten cars with perfect scores.

#### THIRTEEN TIE IN JERSEY

Newark, N. J., June 1—Thirteen of the twenty-seven cars that started on Thursday in the 3 days' endurance run of the New Jersey Automobile and Motor Club evolved from the 415-mile grind with perfect scores. They had maintained the speed schedule throughout and had besides suffered no penalizations for repairs or replacements. The result of the run leaves eight tied for the Shanley trophy for touring cars and five with equal claims on the Sinclair cup for runabouts. The perfect

score finishers were: Touring cars—Matheson, J. B. Ryall; Stoddard-Dayton, J. W. Mason; Oldsmobile, R. A. Greene; Grout, P. H. Johnston; National, F. E. Boland; Knox, C. H. Peckworth; Winton, Charles S. Calvert; Autocar, Peter H. Seery. Runabouts—Stoddard-Dayton, Richard Newton; Corbin and Buick, H. J. Koehler; Jackson, C. W. Oathout; Dragon, Henry Setlow. On Decoration Day the run was through the mountain and lake region of northern New Jersey. The tourists journeyed to Atlantic City by way of Camden yesterday and returned to-day along the Jersey shore via Lakewood and other west shore places.

#### OLDS OWNERS ON OUTING

New York, May 30—The reunion of Oldsmobilists, held here today, resulted not only in the largest gathering of a single make of motor cars in the history of the sport, but one of the biggest parades motordom in this country ever has had. In addition to an attractive program of races for Oldsmobiles and some record-making attempts at the Empire City track, a puissant incentive to participate in the parade was the offering of an Oldsmobile four-cylinder runabout or touring car as a prize in a drawing, to which all owners of Olds cars were eligible. So it was that 170 of the 225 owners entered for the drawing showed up at the gate of the course and received tickets for the lottery. The winner, by the way, proved to be Lindsley Tap-

pin, a Wall street broker, much to the especial disappointment of thirty-five Olds owners who had hoped to change a curved front runabout for a four-cylinder touring car or runabout roadster of 1907 make. John T. Cutting had invited the trade and the public to participate in the parade and outing. The procession, headed by a brass band in a motor truck, made a brave showing, more than 200 cars stretching for more than a mile up Fifth avenue. Arrived at the course half of the cars hearkened to the appeal to come out on the track to be photographed, and the other half hustled for advantageous viewpoints of the races along the fence within and without the circuit. After luncheon in the clubhouse or al fresco on the lawns, Referee Alfred Reeves and his corps of daily newspaper assistants started the races and run them off so promptly that all hands were homeward bound before 5 o'clock. The course was soft, the loose top dressing for the trotters not having been removed or even rolled. There were races for each class of Oldsmobile and a pursuit race and a special race between a curved front and a high-powered runabout, in which the latter was to lap the former twice before the old fellow completed a mile. All were good contests, and several set the 3,000 spectators to hurrahing with genuine enthusiasm. From a racing standpoint, however, the event of the day was Emanuel Cedrino's successful try against the middle-weight track records with a Fiat Junior. He lowered Joe Tracy's 10 miles in a 30-horsepower Renault from 10 minutes  $\frac{1}{2}$  seconds to 9 minutes 47  $\frac{1}{2}$  seconds, and continuing set up 14 minutes 15 seconds for new 15-mile middle-weight figures as a result.

#### HERKOMER TOUR STARTS

New York, June 5—A cable from Dresden announces that the Herkomer tour started today from that city with 161 cars in line. King Frederick August graced the occasion by his presence. Several accidents were recorded the first day, but no one was seriously injured. One car was badly damaged through a collision with a tree. A man was hit in Freiberg. He ran into the street to save a dog.



HOLSMAN CAR TRAVELING THROUGH THE SHINNECOCK HILLS

## RULES FOR STOCK CHASSIS RACE

**Committee, Not Hearing from A. A. A., Makes Public Proposed Conditions—Makers See No Reason Why Event Should Be Sidetracked—Three Classes Suggested**

Indianapolis, Ind., June 3—The committee which drafted the rules for the proposed stock chassis speed contest to be run in connection with the Vanderbilt cup race next fall—H. O. Smith and G. A. Weidely, of the Premier Motor Mfg. Co.; Edgar Apperson, of the Apperson Brothers Automobile Co.; Henry Ford, of the Ford Motor Co., and N. H. Van Sicklen—completed its report May 10 and submitted the rules to the American Automobile Association for its consideration. Since that time the public has heard nothing from the A. A. A. regarding the proposed race and the makers who are vitally interested in the proposition, and realizing that if there is to be a race this year no time can be lost, are beginning to believe the contest has been sidetracked.

Therefore, it has been decided that in view of the fact that there seems to be an impression that the compilers of the rules have failed to report results, and on account of the demand from so many quarters for information, it is considered desirable to have the trade papers make a report of the rules as drafted and thus give the public an opportunity to consider and criticize them. Therefore, the rules as compiled were today sent out by Mr. Smith.

Some allowance is made for the mixup over the Vanderbilt due to the fact that the motor parkway will not be done in time for the race, but the makers do not see why this should interfere with the stock chassis contest inasmuch as if the affair cannot be run off in the east it is far from being an impossibility to find a suitable course in the west; in fact, those interested are said to have in mind several available routes in the west, although they would prefer that the race be run in the east. That the race may assume an international aspect is believed from interviews had with various prominent motor car manufacturers. Benjamin Briscoe, J. D. Maxwell, Alexander Winton, R. M. Owen, F. L. Smith, E. R. Thomas and others have gone on record as favoring such a contest. In making their report to the A. A. A. the members of the rules committee also said:

"We have endeavored to define the stock chassis to avoid the possibility of a contestant entering a special car, which would defeat the purpose of the race. You will note that we have specified that the chassis must be in such condition that it would be possible to reassemble the car complete, meaning the holes should be drilled in the frame for step hangers, and other appliances which would go regularly with the completed car. We have specified that the product must be that

of a recognized established manufacturing concern. We desire, if possible, to make the rules such that a promoter could not produce a sample car, and on the strength of possible success expect to enter the manufacturing field. This would be obviously an unfair advantage and also defeat the purposes of this race. We have endeavored to guard carefully the possibility of any irregular work, and provide for careful inspection of the car to be entered, to determine without a doubt that it is regular. We have not seen fit to limit the contestant to any particular kind of rim or tire, other than that the sectional diameter of the tire and diameter of wheel should conform to the regular product, which would mean that the wheel itself should be a regular stock article. We have made it necessary for the car, in order to enter, to qualify by showing that it is capable of accomplishing a certain speed. This is to avoid, on account of the various classes, the entering of a car which would be so slow and unsuited for the contest as to detract and eliminate the possible spectacular features.

"We have specified that the cars entering this contest should be manned by American drivers and mechanics. We feel the American product is in competition with the world, and welcome a comparison with all cars of various makes in different parts of the world. However, we have limited the drivers and mechanics to American citizens—on account of the fact that many professional drivers abroad have had much better opportunities and greater experience, and this event is not to display the capabilities of the driver so much as the real merits of the car itself, and some car, manned by a foreign driver with a much larger experience than has been possible with the American, may—with his experience with the car only equal to the other contestants—produce results which would reflect credit to the car, when the balance of credit in reality lies entirely with the driver's exceptional ability.

"We have worked out several formulas for handicapping the several cars according to the cylinder displacement or the total cubic contents, but after giving the matter full consideration, have realized that any of the forms of handicapping will be strictly on theory, as up to this time we have no definite data in the line of results of performances by which to check our theories, and we felt that any theoretical handicap might work an undue hardship on some entrant.

"It is our plan that every car should be given a certificate for performance

credited with so many points, provided the contestant has not on account of loss of time, lost more than 900 points. Any car losing more than 900 points to be disqualified.

"It is hoped that these proposed rules and regulations may receive favorable consideration at the hands of your committee, and would suggest that either Mr. Apperson or the writer—H. O. Smith—or both, will be pleased to meet your committee at your convenience, and further discuss the plans and purposes of the race and give you any additional information you may desire relative to the views of this committee." The rules follow:

This event to be known as the stock chassis speed endurance contest, open to standard stock touring car chassis equipped with racing bodies. Conditions governing same are suggested to be as follows:

1—Touring car chassis definitions—To permit of entry under these rules the chassis shall be a standard chassis for the car in the class in which it is entered. Chassis to be eligible shall be so constructed and completed that without any changes whatsoever it can, by adding the necessary parts, be assembled into a complete car of its kind.

2—Cars eligible for entry must be the product of a recognized motor car manufacturer and details of construction must conform to those of the regular stock chassis of the same model.

3—The chassis may be stripped of lamps, lamp brackets, mud guards, guard irons, running boards, irons and steps, but must carry the hood. The loss of the hood during the race shall have the effect of disqualifying the car.

4—Every car entered in this contest shall be subject to a detailed examination by an engineering committee to be hereafter appointed, for the purpose of ascertaining that no evasion of these rules has been attempted, such examination to be at headquarters on the course not later than 3 days prior to starting in contest, and if it is found that evasions have been made or attempted the car shall be disqualified and shall not be allowed to start. There shall be no appeal from the decision of this committee; entry fee shall be forfeited and participation in future events barred.

5—Location of engine, transmission and dash shall be as per regular equipment.

6—Location of steering wheel shall be standard, using standard steering column, gear and wheel.

7—Kind of tires and rims to be used are optional with the entrant, except dimension of wheels; tires shall be as per regular equipment.

8—Speed qualifications: Any car to qualify for entry in either of the classes must show it is able to make 1 mile over a measured course under official observation at the rate of 50 miles per hour. Every car will run both ways on this measured mile. Each entrant is to be given ample opportunity to qualify. The officials present to decide whether the car is eligible for entry or not.

9—Tread: The tread of the cars in the various classes will be that regularly employed as standard by the manufacturer entering the car.

10—Exhaust: Cars competing in this contest shall have a horizontal exhaust pointing backwards and having its rear end sufficiently high to prevent throwing up dust.

11—No weight limit.

12—No restrictions as to ratio of gear.

13—All cars entered in this contest shall be manned by American drivers and mechanics.

14—Occupants of cars may be changed if necessary during the contest, such changes, whether of driver or mechanician, or both, to be effected only at the places specified for repairs and refills.

15—All repairs and adjustments to be made on running time.

16—Repairs to be limited to parts carried on the car, except tires and detachable rims.

17—All repairs to be made by the occupants of the car, except tires and rim replacements.

18—Filling of gasoline and oil tanks by outside help will be permissible.

19—Gasoline, oil and water to be cared for by each contestant. This means that the entrant of each car is to provide his own stations for gasoline, oil and water supply.

20—Distance of this race will be approximately 600 miles, it being the intention to run the race on three consecutive days. Distance to be run approximately 200 miles per day.

as near 200 miles as can be figured by the completion of a given number of laps of the course.

21—There shall be three classes in which the cars shall be entered in accordance to specified maximum piston displacement as follows:

Class A—Maximum piston displacement, 535 cubic inches.

Class B—Maximum piston displacement, 375 cubic inches.

Class C—Maximum piston displacement, 250 cubic inches.

22—Wheel base shall be as follows:

Class A—Minimum, 105 inches.

Class B—Minimum, 100 inches.

Class C—Minimum, 72 inches.

23—Starting order for the competing cars shall be determined by lot.

24—Every contestant shall be privileged to change one or more tires after each day's running under supervision of driver and an official inspector without being charged for time.

25—On the second and third days starting will be in order of finish on previous day.

26—Cars making fastest time over the entire distance are to be awarded a perfect score, amounting to 1,000 points for performance.

27—Cars finishing behind the fastest car shall be penalized five points for each additional minute required to complete the distance.

28—Any car failing to score for the entire distance more than 100 points shall be disqualified without a certificate.

28A—No entry shall be accepted in the name of any other than the bona fide manufacturer of the car without the written sanction of the manufacturer thereof, and his statement acknowledging familiarity with the conditions governing the contest and his assumption of all responsibility for failure on part of the entrant or his representative to fully comply with the said rules.

28B—Hoods to be sealed by an official sealer as soon as day's run is completed and until start on succeeding day's run, when an official sealer and no other person shall remove the seal. Both the placing on of the seal and removing of the seal shall be in presence of the driver.

29—Garage: Each car having completed the first and second day's run within the specified time shall immediately be given in charge of an official appointed to guard it and take it into the garage. The driver, after having stopped the engine, shall only be allowed, if necessary, to close the gasoline and oil cocks and the car shall be pushed into the garage. Each car shall be placed in a separate compartment, and no one shall be allowed to come near it until the time of starting on the following day. On the following morning an official sealer shall cut the seal, or seals, in the garage at a sufficiently early hour to permit of the engine being started and the car driven under supervision to the starting tape. The car shall then be handed over to the drivers at the time fixed for departure of each car. All operations connected with refilling and repairing can only be effected after the start, and the time spent in this way shall be counted as part of the running time.

30—It shall be the duty of the mechanic on each car to keep close watch in the rear for approaching cars and to notify the driver of the approach of any car, or cars. The driver shall immediately on receiving notice from his mechanic that a car, or cars, are about to attempt to pass, turn to the right of the road as far as possible with safety, with a view of giving such approaching car, or cars, room to pass. Any car, or cars, having passed another car, or cars, must ascertain that they are sufficiently in advance of passed car, or cars, to enable taking the right of road with perfect safety to the car, or cars, passed. No car should take the right of the road until at least two open car lengths in advance. Failure to comply with this rule shall be sufficient cause of disqualification of car and crew from further participation in contest.

31—Any protest must be made in writing and be accompanied by a fee of \$100, which will be returned if protest is sustained. Such protest, if for violation of rules during race, must be made within 12 hours of alleged violation.

32—In order for any car to qualify for the second and third running, such car must finish the distance of the first and second days' running with the equivalent of 100 points or more to its credit. Loss of points on first and second days will be added at end of second day, and any car having lost a total of 901 points or more on the first day, second day or both days, shall not be permitted to start in the final day's run.

33—Violation of any of the foregoing rules renders the car subject to disqualification.

34—No car having been disqualified shall be entitled to the return of entry fee.

35—Entry fee: The entry fee shall be \$500 for one car, \$250 for each additional car.

36—Number of cars: Any manufacturer may enter as many as two cars in each class.

## RACES ON ISLE OF MAN

### Rover Takes Tourist Trophy Event and Beeston-Humber Heavy Touring Car Contest

New York, June 1—Cable advices from London tell of the victory of the Rover in the tourist trophy race on the Isle of Man on Wednesday and also of the success of the Beeston Humber in the heavy touring car race. The Graphic trophy was won on Thursday by a Berliet. The Isle of Man course was drenched with rain the day of the tourist trophy races, and in consequence there were many accidents caused by sideslip. The soaked roads also prevented fast time being made. The contesting cars in the heavy touring car race were allowed an extra gallon of gasoline because of the state of the roads. Twenty-two started for the tourist trophy and nine for the heavy touring car race. The last time around in the former event there were six cars with chances to win. It looked, 3 miles from the finish, as if Lee Guinness, in an 18-horsepower Darracq, would be successful, but just as he was about to count his chickens his gasoline supply ran out and he was a backnumber. Only two of the cars managed to survive on their gasoline allowance—E. Courtis, in a 20-horsepower Rover, and James Reid, in a 16-20-horsepower Beeston Humber. Courtis' time was 8 hours 23 minutes 27 seconds for the 241 miles 5 furlongs 140 yards. The winner averaged 28 1/4 miles an hour as against 40 miles a year ago by the Rolls-Royce.

The heavy cars went 201 miles, and the winner turned up in the old-time cyclist, G. P. Mills, who drove a 30-horsepower Beeston Humber in 7 hours 11 minutes 1 second. Greame Fenton, in a 25-horsepower Gladiator, was the only other finisher, his time being 7 hours 31 minutes 35 1/2 seconds.

The Graphic trophy was a hill-climb on Slein Lewaigne hill, near Ramsey, the course having a gradient of 424 feet in 2,550 yards. The course was 2 miles 3 furlongs in length, and the winner turned up in J. E. Hutton, in a 60-horsepower Berliet, in 3 minutes 40 1/2 seconds. J. Watson, 24-40-horsepower Berliet, was second, in 3 minutes 45 1/2 seconds, and T. Henshaw, 35-horsepower Daimler, third, in 3 minutes 50 1/2 seconds. Fourteen cars started.

Douglas, Isle of Man, May 25—England now is on the eve of the tourist trophy race and its twin companion, the heavy touring car contest. It was thought that, as the heavy touring car contest would allow more scope to manufacturers, so much advantage would be taken of it that the tourist trophy race would suffer a considerable diminution of interest. For some reason, however, the trade has not taken kindly to any of the three contests this year. The entries for the tourist trophy originally amounted to thirty-one and for the heavy touring contest sixteen.

It is apparent that the double cylindered horizontal engined type of car, which has hitherto cut no small figure in this contest, has disappeared. Still none of the cars competing is of the standard pattern of the various manufacturers. Every one has been specially constructed, and most have some peculiarities called for by the character of the contest which are not fitted in the ordinary way of business. The main conditions of the race are: Fuel allowance, 1 gallon of .715 gasoline specially provided by the Royal Automobile Club; the load to be carried on the chassis must amount to 1,400 pounds; distance to be six circuits of the Isle of Man course, each circuit measuring 40 miles 6 furlongs. Other conditions are that no car must have more than four speeds, and on Tuesday next it will be tested as to its capacity to be driven on its top gear at the rate of 12 miles per hour on the level esplanade of Douglas, and also to start from a standstill and ascend a hill of about one in six. The former condition is intended to limit the use of abnormally high gears, the latter to insist upon the use of a really efficient low gear. Certain minimum measurements for chassis and body are insisted upon. The alterations effected from previous contests are shown briefly, thus:

	Miles	ton mile of	Fuel per
	Load	per gall.	chassis load
1905.....	950 lbs.	22.5	.105 gall.
1906.....	1,125 lbs.	25.0	.079 gall.
1907.....	1,400 lbs.	25.0	.064 gall.

There are also alterations in the chassis and body dimensions which make previous contests no very great guide for the present one. Last year the weight of chassis was prescribed. This year no weight is fixed, so that the manufacturer can use his own discretion, but as the load weight has been increased and the fuel allowance kept constant there has been no attempt to lighten this portion, but rather a tendency to strengthen.

The heavy touring car contest is practically a modification of the T.T. contest. The fuel allowance is 1 gallon to each 16 miles. The load to be carried, irrespective of chassis, is 1 ton, and the distance is seven circuits, or about 282 miles. The principal deviation from the T.T. lies in the necessity to carry a wind shield of an area supposed to represent a covered touring body. The fuel allowance works out at about .0625 gallons per ton mile of chassis load.

### AFTER STONE THROWERS

Pittsburg, Pa., June 4—Pittsburg motorists are up against the rock nuisance again. On Grant boulevard several new cars have been badly marred and their owners more or less injured during the past week by small missiles thrown down from the high cliffs above by small boys. Last year the police had a strenuous time gathering in the urchins and this year they will act in conjunction with the Automobile Club of Pittsburg to break up the dangerous practice.

N.H. Van Sicklen, Manager

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## IMPORTS AND EXPORTS

GOVERNMENT statistics as compiled by the treasury department show that while exports in motor cars and parts are rapidly increasing, the imports are falling off, so that the American manufacturer is making headway in the markets of the world through two sources and the indications are that this headway will be increased as time passes. It cannot be at all encouraging to the importer to see his business dropping before the makers of this country, and it is certain the foreign maker will not digest the news with any considerable degree of comfort. And it must not be imagined that he will sit idly by and permit his American trade to fall off if he can devise any legitimate way to prevent it. He is making strenuous efforts to stem the tide, but with the tariff against him he is not making perceptible headway; in fact, he is being carried down stream, as American gains in exports and a diminution of imports would indicate. During the past year the American motor cars exports have doubled with France, Germany, Mexico, British North America and South America, while substantial gains have been made in other directions. There has been a falling off in but a few cases, the most noticeable being in the case with Africa, in which the decrease was from \$26,925 to \$8,673. During April last 397 cars, valued at \$638,014, were exported from various ports, together with \$48,130 worth of parts. During April, 1906, the combined value of the cars and parts exported was only \$408,333. During the 10 months ending April last 2,286 cars, valued at \$3,603,298, and parts to the value of \$501,439, were exported, while during the corresponding period of 1906 the combined exports of cars and parts was but \$2,473,207. The latest returns show that 89 motor cars, valued at \$277,052, were imported into the United States during April, as compared with 144 cars, valued at \$421,268, imported in April, 1906. During the 10 months ending April last the number of cars imported was 1,008, valued at \$3,505,388, while during the corresponding period of 1906 the number imported was 888 and the value \$3,115,361. During the 10 months ending April last cars were imported from the following countries: United Kingdom, 85, valued at \$287,678; France, 724, value \$2,571,573; Germany, 53, value \$221,901; Italy, 121, value \$348,472; other countries, 25, value \$75,764. Parts of motor cars to the value

of \$66,957 were imported into this country during April last, as against a value of \$39,709 for the same month of last year. These imports increased in value from \$319,076 during the 10 months ended April, 1906, to \$641,466 during the same period this year. Nothing can better illustrate the gain of the American makers than the table of exports for the 10 months ending with April:

United Kingdom .....	\$616,177	\$983,921
France .....	170,601	358,648
Germany .....	57,259	102,556
Italy .....	227,588	205,519
Other Europe .....	123,233	216,918
British North America.....	435,850	870,332
Mexico .....	293,002	692,652
West Indies and Bermuda.	224,676	183,552
South America .....	61,780	170,270
British East Indies.....	31,046	33,086
British Australasia .....	148,124	189,454
Other Asia and Oceania....	44,096	76,976
Africa .....	26,925	8,673
Other countries .....	12,850	12,180

## CHARITABLE MOTORIST



HICAGO boasts a motorist who may be more responsible for removing prejudice against the motor car and motorists than any one thing or combination of things. A short time ago a lawyer named S. Mason Meek, while driving his car on a west side boulevard, was unfortunate enough to strike and kill a street sweeper. No blame was laid against Mr. Meek; it was admitted he was in no manner at fault. But the street sweeper was an old man, his widow poor, 75 years of age and in feeble health. When Mr. Meek learned these circumstances he voluntarily proposed to take care of the unfortunate woman as long as she lives and has already provided for her comfort for the future. This is a simple story but one of extreme generosity—one that is not often recorded—but it seems to illustrate that some of the prejudice that has been found to exist has been without just cause when the prejudice has been held against motorists as a class. The act of Mr. Meek ought to go to the world in order to show at least what one man has done and what another might do under similar circumstances if financially able to do so. It was a pure case of charity, for Mr. Meek was not called upon to show such generosity where he was entirely blameless.

Owing to the large amount of news pertaining to Decoration day events the first part of "Some Trends of Modern Automobile Design," announced to appear in this issue, has been held over and will appear in Motor Age in its next week's issue.

## LOSING THE SPORTING ASPECT



ITTLE by little the sporting aspect of motoring contests is giving way for a more serious view of such matters. This is shown by almost every one that has been run within the past year, although of course any real contest must smack more or less of the sporting side. A few years ago most contests that were held were judged more from the sport end than any other; today they are considered as the mechanic would consider them, and this sort of consideration is such as tends to lead the events more toward the business end than toward any other one. The man who has been a motorist for the bare space of a year has naturally come to consider how well a car can withstand the strains to which it is put in one of these contests rather than to consider it from the sporting side, for he has come to realize to some extent what it means to punish a car in an endeavor to determine its full capabilities in the matter of strength. The motor car is in a transitory state and its development is being watched by more than those who are responsible for its creation and those who find its use pleasing and beneficial from one point or another—the world is watching this development with a view of ultimately adopting it as a means of transportation for freight and passengers. These contests must therefore be taken to mean something more than mere sporting events, for such they are not. Not one in a hundred contestants would admit he found real sport in driving a car in a hill-climb, a reliability test, or any other competition; he would, on the other hand, be in a position to show that his part in such an affair has been from pure business considerations and with a view of demonstrating the existence of what the world might expect of the motor car in the ordinary use. As time passes it will be seen that this side of the case is being shared more and more and that the sporting side is being left so far in the background that in a year or so it will be among the things that have been forgotten for the more serious side. Were not all this true the makers, who happen to be the main supporters of all contests, would not be found spending large sums of money in an endeavor to make something good and substantial for the mere sake of being able to be winners over their next-door neighbors; they see something more than sport in these contests—something not only directly beneficial to themselves but to those who use and who will use cars.



## CURRENT COMMENT



SOMETHING more rigid in the matter of reliability tests will have to be devised if there is to be any hope of securing a single winner. In no contest that has been run for a year or more has there been a single winner, the number of cars finishing with perfect scores being anywhere from five to twenty-five, showing either great reliability and good driving or comparatively easy rules. The makers have found no great difficulty in designing cars that could easily finish these contests with perfect scores and some of the cases where a few penalties have been set against cars have been the result of carelessness on the part of the drivers rather than any real fault of the cars themselves. There has been a sufficient number of tests held within the past 18 months to demonstrate that a good car in the hands of a good driver is capable of going through with a handicap more rigid than any that has yet been made, so that if anything but mere advertising is to come out of these affairs the committees making the rules will be compelled to be more severe than they have been in the past.

AMERICANS and Englishmen and Frenchmen will have some day found in Japan a competitor in the manufacture of motor cars. There is nothing that escapes the Jap—he is out to learn and to improve after he has learned—he is a good one to watch. General Kuroki has been

a guest of this country for a few weeks, and in that time he has seen many things that were new to him. He carries with him a large staff of intellectual countrymen, and these men are simply loading up with information that will some day be of immense benefit to the flowery kingdom. General Kuroki has ridden in motor cars in all the principal cities he has visited. He has seen all the motor car can do and it is safe to say in a very short time Japan will be making its own motor vehicles, and the older manufacturing countries will be deprived of what will prove a large and well-paying selling field—the orient. Japan makes boats and will make cars.

THE Massachusetts legislature has handed out another piece of legislation aimed at motorists and without its receiving any opposition from them in that state either. It is the "boomerang" bill that was hurriedly put in after a Boston lawyer took it upon himself to send notices to all the chiefs of police in the state that an arrest for violating the speed regulations was not legal without a warrant. The motorists did not sanction the letter and its publicity created a lot of bother because very few arrests were made during the year. Now the bill has gone through and the motorists who break the laws can be marched to the station and held there until they get bail if the officer feels so disposed. It was a case of bad meddling that was unnecessary and uncalled for.

ECONOMY and reliability in the case of the motor ought not to be matters of doubt on the part of the intending purchaser, for elsewhere is recorded the fact that a single-cylinder Cadillac car has traveled 31,000 miles on an up-keep charge of but \$124, and to show that it was still capable of doing good service it was put through a thousand-mile non-motor-stop stunt. When up-keep costs less than half a cent a mile it is pretty good evidence of the quality of American-made cars, isn't it, Mr. Foreigner?

PRESIDENT ROOSEVELT must have enjoyed the efforts of a couple of motor car makers to see which should have the honor of giving the chief executive a ride and incidentally securing a picture of the president about to step into a particular make of car. Maybe the president didn't notice all the excitement and the effort of one maker to get ahead of the other, but if he did he must have been pleased with such a shining example of the strenuous life.

DECORATION day saw a sufficient number of contests wherein the motor car played the title role to make the prediction that the public is sufficiently interested in this form of sport to warrant the building of several racing parkways throughout the country. While the track events seemed to have proved attractive in a measure the observing motorist must have noticed that hill-climbing events seemed to have been the better drawing cards, possibly because of the free show, but probably because of the fact that a strenuous hill-climbing stunt shows the worth of a car better than any other form of a contest. There has been a tendency to do away with the short races on tracks and to place middle-distance events on the programs in their stead, with comparatively small fields and with a consequent lessening of the dangers that have surrounded track races heretofore.

BARRING steam cars from hill-climbing contests is apt to cause something of a rumpus before the matter is settled. There is really no reason why the steam vehicles should be barred, for they are in the competitive field along with the internal combustion motor vehicles from any standpoint that may be considered, and the public is entitled to know which of the two types may prove the more successful in all sorts of contests and under all conditions that may arise.

## THE WEEK IN BRIEF

White steamer breaks record up Giant's Despair at Wilkes-Barre, Pa.; Stanley, Maxwell, Corbin, Stearns, Pope-Hartford, Great Chadwick and Matheson are winners.

Show matters discussed by A. L. A. M.; decision arrived at to do away with demonstrations at Mailson Square garden show and to have motor cycle division.

Rover wins tourist trophy race on Isle of Man; heavy touring car race won by Beeston Humber; Berlitz o.e., two in hill-climb for Graphic trophy.

Ten cars tie with perfect scores for five trophies offered in Long Island Automobile Club's 2-day endurance run.

President Roosevelt visits Lansing, Mich., and is converted to motoring; takes rides in Rro and Oldsmobile.

Oldsmobile reunion at Empire City track proves huge success and brings out many motorists.

Rules for proposed stock chassis speed contest as drafted by makers' committee are made public.

Twenty-nine entries received for 200-mile reliability run of New York Motor Club.

Thirteen ties result in 415-mile test of New Jersey Automobile and Motor Club.

Locomobile and Stanley tie for best time in hill-climb at Bridgeport, Conn.

Oldsmobiles break 100 and 50-mile records in races at Readville, Mass.

## COMING MOTOR EVENTS

Herkomer Tour—Herkomer tour under auspices of Imperial Automobile Club of Germany, June 4-11.

New York Reliability Test—New York Motor Club, 200-mile reliability test to Albany and Pittsfield, finishing at Albany, June 6.

Cleveland Hill-Climb—Annual hill-climbing contests of Cleveland Automobile Club, June 8.

Emperor's Cup Race—Road race for emperor's cup under auspices of Imperial Automobile Club of Germany, June 14.

Sealed Bonnet Test—Automobile Club of America's sealed bonnet contest, starting and finishing in New York, June 19-22.

Scottish Trials—Reliability trial under auspices of Scottish Automobile Club, June 25-29.

Chicago's Reliability Run—Chicago Motor Club's reliability run to Waukegan, McHenry, Elgin and Chicago, June 28.

Grand Prix—Second running of French grand prix, July 2; also sportive commission cup over same course.

Glidden Tour—Start of Glidden tour from Cleveland, O., July 10; route through Toledo, thence to Chicago.

Ardennes Cup—Automobile Club of Belgium's Ardennes circuit race, July 22.

Liedekerke Cup—Automobile Club of Belgium's race for Liedekerke cup, July 23.

## CLASSY FIELD IN TEST

### Twenty-Nine Cars Nominated for Double Century Grind of the New York Motor Club

New York, June 4—Everything points to a noteworthy contest in the 200-mile 1-day endurance run of the New York Motor Club to Albany by way of the Berkshire hills, which starts from Columbus Circle at 6 o'clock on Thursday. Twenty-nine entries have been made—eighteen in class A for touring cars and eleven in class B for runabouts. The entrants are: H. H. Knepper, 24-horsepower Frayer-Miller; James Joyce, 40-horsepower Berliet; A. L. Kull, 24-horsepower Dragon; John Haynes, 24-horsepower Dragon; H. A. Lozier, 40-horsepower Lozier; Wyckoff, Church & Partridge, 30-horsepower Franklin; W. I. Fickling, 30-horsepower Stearns; A. M. Robbins, 40-horsepower Aerocar; A. G. Southworth Co., 25-30-horsepower Pope-Hartford; A. G. Southworth Co., 50-horsepower Pope-Toledo; Knox Automobile Co., 25-30-horsepower Knox; George J. Scott Motor Co., 40-horsepower Glide; C. B. Warren, 30-horsepower Haynes; C. S. Johnston, 35-horsepower Continental; H. E. Trevor, 40-50-horsepower American; Mitchell Motor Car Co., 35-horsepower Mitchell; Atlantic Motor Co., 35-horsepower Stoddard-Dayton; B. F. Dawson, 30-horsepower Stoddard-Dayton; Corbin Motor Vehicle Corporation,

three 24-horsepower Corbins; E. L. DeCamp, 50-horsepower Welch; White Co., 30-horsepower White; S. B. Stevens, 50-horsepower Darracq; Cimolli Brothers, 24-horsepower Mora; Maxwell-Briseau Motor Co., 16-horsepower Maxwell; R. M. Owen & Co., 24-horsepower Premier; R. M. Owen & Co., 16-horsepower Reo; Harrolds Motor Car Co., 50-horsepower Pierce.

The route is via Poughkeepsie, Amenia, Lakeville, Great Barrington, Lenox and Chatham to Albany, a distance slightly in excess of 200 miles. There will be eight controls, including a noon control for luncheon at Great Barrington. A car will be penalized one point for each minute late at controls and two points for each minute consumed in making adjustments, repairs or replacements.

Jefferson de Mont Thompson, chairman of the racing board, will sail for Europe tomorrow for his annual tour a-motor and

to be present at the races for the kaiser's cup and the grand prix. He will keep in touch with his associates of the racing board, who during his absence will pursue the policy determined upon in an effort to make possible the running of another Vanderbilt cup race over some eastern course in the autumn.

### OLD MOTOR RUNS WELL

Chicago, June 1—C. H. Foster, manager of the Cadillac Co. of Illinois, is convinced he has successfully demonstrated that age does not impair the running qualities of the Cadillac motor. Last Monday morning Mr. Foster started out in a 4-year-old single-cylinder Cadillac, which already had run 31,000 miles, in a 1,000-mile non-motor-stop stunt. The car, which was the one formerly owned by R. L. McCardell of New York and which won the recent Cadillac competition, was cranked by Mayor

## WILL HELP ON ROADS

### A. L. A. M. Appropriates \$5,000 To Be Used by Highways Committee—Show Discussed

New York, June 5—Special telegram—All forty-one of the members of the Association of Licensed Automobile Manufacturers were represented at yesterday's semi-annual meeting of the board of managers. The most important action taken was the appropriating of \$5,000 to be used at the discretion of a good roads committee, which will be appointed later. This committee will work in connection with the good roads committees of other associations which contribute. E. R. Thomas, R. D. Chapin, S. T. Davis, Thomas Henderson, H. A. Gillis and Albert Pope made speeches in favor of this good roads movement, Mr. Thomas expressing himself in a manner which is unmistakable as to his attitude toward good roads. He said that in his mind the work on good roads was just in the beginning, and if the work was properly promulgated it would be but a short time before a highway from New York to the Pacific would be under way. In fact he was ready to stand by any movement to further the work of a national highway connecting the east with the west.

The morning session was given over to a discussion of the litigation now pending against the manufacturers and dealers of unlicensed cars, suits or which were filed

during the past month. The afternoon session was occupied with questions pertaining to the forthcoming show in Madison Square garden. The show committee, which has for some time been working on schemes for the decoration of the garden and having selected one which in its estimation was particularly adapted to a show held in the fall of the year, recommended to the board of managers the scheme offered by S. R. Ball. The board unanimously sanctioned the selection of this scheme and practical work on the decorations will begin at once. Marcus I. Brock, assistant general manager of the association, who resigned from the show committee last year, was reappointed a member of the committee to take the place of Carlton R. Mabley, whose resignation as a member of the committee was accepted by the board. One of the features recommended by the show committee



MAYOR BUSSE, OF CHICAGO, CRANKS NON-MOTOR STOP CADILLAC

Busse Monday morning and, driven alternately by Mr. Foster and George Farnsworth, completed its 1,000 miles Wednesday night. It was going so well Mr. Foster decided to keep on until Thursday night at 7 o'clock, when he stopped the motor, the odometer showing it had run 1,221 miles on this extra stunt without the motor once missing. The car was fitted with Hartford Midgley tread tires.

### PITTSBURG TEST OF ELECTRIC

Pittsburg, Pa., June 4—The Queen Victoria Baker electric car, which is handled in Pittsburg by the Colonial Automobile Co., last week made a run of 109.5 miles on one charge. The car was one that had been used for some months and the batteries were from regular stock. These were nine M. V. Exides of twenty-four cells each. The route was rough and the driver encountered several showers.

and adopted by the board was the elimination of any demonstrations at the show. For some time it has become apparent that it was unnecessary to demonstrate cars during show week. People desirous of obtaining demonstrations will be accommodated from the local agencies of the members. Owing to the number of applications for space from manufacturers of motor cycles, the recommendation by the show committee that an exhibit of motor cycles be given was approved. A complete exhibit of motor cycles will be held in connection with a full line of commercial vehicles which have been promised by members of the association.

After the regular session of the board, the handbook committee, consisting of L. H. Kittredge, William E. Metzger and Thomas Henderson, held a meeting to discuss the 1908 handbook, which they hope to have ready by the time of the New York show in Madison Square garden. Representatives of the National Association of Automobile Manufacturers, the American Automobile Association, the Licensed Association of Automobile Manufacturers, the American Motor Car Manufacturers' Association and the Automobile Club of America met yesterday and laid the foundation for the formation of a National Highway Improvement Association. Another meeting will be held on June 27, to which representatives of the National Grange and the highway improvement division of the United States agricultural department will be invited with the idea of boosting the good roads cause throughout the United States.

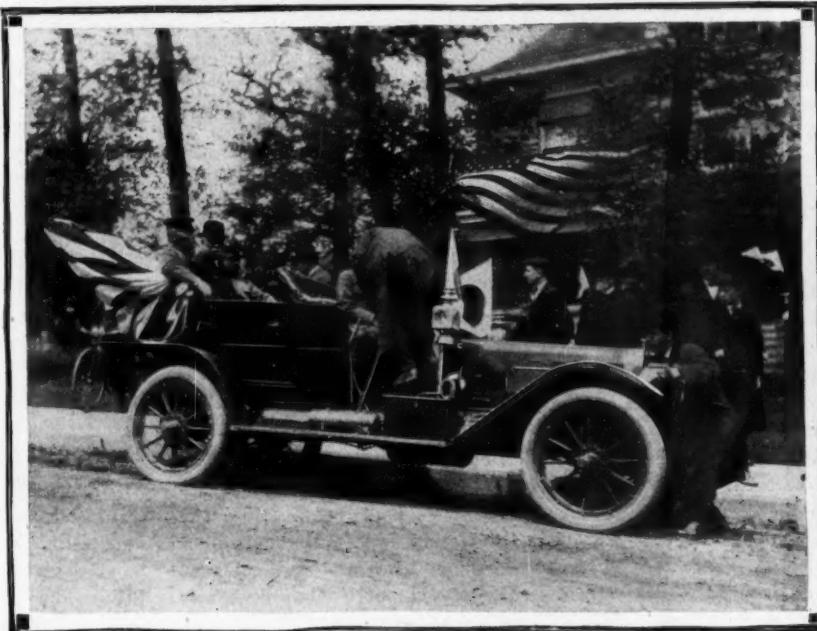
#### TALKS COMMERCIAL SHOW

New York, June 5—Special telegram—Eleven members attended the regular monthly meeting of the N. A. A. M. today. The commercial vehicle show to be held at Chicago November 30-December 7 came up for considerable discussion. On the recommendation of the show committee it was decided that space shall be allotted by means of a drawing, in which all applicants, whether members of the N. A. A. M. or not, may take part. It was decided further that each exhibitor shall be furnished free of cost a reasonable number of invitation tickets, available for the use of men only. The allotment of space for both the Chicago shows will take place at the office of the association on the morning of Monday, July 1.

## ENGINEERS TALK SHOP

### Meeting at Indianapolis Well Attended—Haynes and Fay Lecture on Motor Matters

Indianapolis, Ind., June 3—With a trip to Purdue university, where a business session was held, the spring meeting of the American Society of Mechanical Engineers ended last Friday. With the exception of the last session all meetings were held at the Claypool hotel in this city and the attendance exceeded all expectations. There were from 300 to 350 engineers from different parts of the country in the city. There was unusual interest attached to the spring meeting in view of the fact that it was largely devoted to questions relating to motor car engineering. On Wednesday evening the time was devoted wholly to



GENERAL KUROKI RIDES IN FORD AT GENEVA, ILL.

motor topics, the meeting being styled an "Automobile Symposium." At this session Elwood Haynes gave an interesting talk on "Materials for Automobiles," and by way of illustration showed a complete motor car axle and several pieces of steel that had been tested for their tensile strength. These were passed among the engineers and an opportunity given for questions which were answered in detail by Mr. Haynes. Henry Hess, of Philadelphia, talked on "Ball Bearings." He had with him a stereopticon outfit with several entertaining slides showing ball bearings of various descriptions, many of which were marred by imperfect materials. He was followed by T. J. Fay, of Brooklyn, who gave an entertaining talk on "Special Automobile Steel." Mr. Fay's talk was so decidedly technical, containing so many mechanical terms apparently not understood by all of the engineers, that he was

called on for special explanations of some of them. B. D. Gray, who was to have read a paper on "The Railway Motor Car," postponed reading his paper until Thursday morning and it proved to be especially interesting. Mr. Gray told of the development of the railway motor, bespeaking for it a brilliant future. Trips were made to the plants of the Parry Mfg. Co., National Motor Vehicle Co., Nordyke & Marmon Co. and Atlas Engine Works. On Friday morning the visitors went to Lafayette, where a session was held at Purdue university, a state institution, and the mechanical laboratories were inspected.

### CLEVELAND READY FOR CLIMB

Cleveland, O., June 4—The Cleveland Automobile Club is making some unusual preparations to insure a great success for the annual hill-climbing contest to be held on Gates Mills hill Saturday of this week.

The hill has been graded, graveled and rolled, the curves have been banked and the base of the hill, which caused some drivers trouble in previous events, has been widened. An electrically-operated chronograph has been rigged up and five telephone stations on various parts of the hill will report the progress of cars and give signals. The average gradient is a trifle under 8 per cent and the elevation in 1 mile is 316.5 feet. There will be twenty events, another event having been added to the original program in the shape of a contest for electric vehicles, several makers of this type having expressed a willingness to enter.

Unlike the Wilkes-Barre contest last week, practically all the events will be open to steam cars as well as those using gasoline as fuel.

### KUROKI IN A MOTOR CAR

Chicago, June 1—General Kuroki and the rest of the Japanese party that is stopping a few days in Chicago visited the Fox River Country Club today at Geneva, Ill. Of course the motor car played a prominent part in the reception, the visitors being met at the station and whirled out over the country roads to the clubhouse. The general rode in a six-cylinder Ford, driven by Walter Ribble, while his staff was distributed among other cars—a Pope-Hartford, Moline and Autocar runabout. A reception was first tendered the party at the mayor's house, after which the drive to the clubhouse was taken the Japanese being banqueted there by the club officials.

## PRESIDENT ROOSEVELT TRIES MOTORING

Lansing, Mich., June 1—Nothing that President Roosevelt said or did yesterday during his brief visit to the Michigan capital in honor of the semi-centennial of the Michigan Agricultural College was of quite so much interest to the citizens of the city and state as the fact that he rode in a couple of motor cars. Had he restrained from riding in any motor car, or had he seated himself in either a Reo or Oldsmobile without gracing the other, the entire day's entertainment would have been spoiled for thousands of people, and incidentally the entire political status of Michigan might have been changed. This much and more hung upon the grave question as to whether the nation's chief should select a motor car or an old-fashioned carriage as the vehicle de luxe for his parade, and in fact no other feature of the function was of much interest to citizens or Lansing or to Michigan.

Of course it was vaguely understood President Roosevelt was about to honor the state and Lansing by his presence as chief executive of the nation; furthermore, many people were led to believe the semi-centennial of the great agricultural educational institution was to be quite an event, particularly as the president was to make a lengthy address which should teem with wisdom, epigrams and confidential family advice. Ordinarily any one of these features would have made a big day for Lansing and for Michigan. When, however, the battle broke out between the Reo

forces on one hand and the Olds cohorts on the other, everything else in the city sank into oblivion in comparison.

In Lansing everybody works either for one or the other of the two big motor car factories, has a friend who does, or knows a friend's friend who expects soon to be so employed. So strong is the rivalry between the two factories, however, that the man who leaves skimmed milk at the door

of the rival concerns laid plans for weeks, keeping the telegraph wires hot, cornering the market on special delivery stamps and railroading special representatives to Washington, all to the end that the president might not forget that there were two motor car factories in Lansing and that both were not only willing but anxious to furnish him a vehicle free during his entire stay in the Michigan state capital.

Then it was regarded as good politics to secure a picture or two of the president in a car, just as a reminder of his visit. To make sure that the photographic job should be a good one expert picture takers from New York and Boston were imported for the occasion. By this time the semi-centennial, Michigan Agricultural College, the president's address and the presence of thousands of visitors were entirely forgotten, but the anxiety as to which motor car would contain the president was uppermost in everybody's mind. The motor industry is the bread and butter of Michigan, and who can forget his regular meal ticket?

But a few words are required to state that President Roosevelt, with his proverbial good judgment and good luck combined, enjoyed the privilege of scudding about town for a few minutes in a Reo as well as an Oldsmobile. At nightfall, when the nation's first citizen was well on his way eastward, the battle lines were withdrawn and good judges and critics regarded the day's motoring engagement as a drawn battle.



PRESIDENT AND SECRETARY IN SECOND CAR, A REO

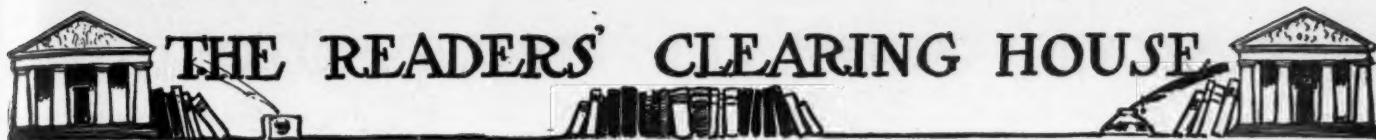
of the Olds employee knows better than to solicit trade from the family whose breadwinner dallies with an envelope from the Reo paymaster. It chanced that when rumors wafted about town to the effect that President Roosevelt anticipated recognizing the city's main industry to the extent of riding in a motor car there was much guessing as to which car he could be inveigled into on the great day. Officials

## WILLYOUNG COMPANY EQUIPPING YONKERS PLANT

The Willyoung Appliance Co., of Yonkers, N. Y., recently incorporated to manufacture ignition apparatus, speed measuring devices and combustion engine accessories generally, has been engaged for the past 2 or 3 months framing up its organization and equipping its factory. It has leased for a term of years a two-story factory at Ludlow Station, Yonkers, having about 5,000 square feet to the floor. On the bottom floor is the tool room, general machine shop, forge room, sand blast, and nickel-plating plant. The tool room is equipped with Pratt & Whitney and Reed lathes, Hendey shaper, Browne & Sharp milling machines and grinders, drill presses, forges, etc. In the general machine shop are Pratt & Whitney screw machines, both plain and automatic; Garvin screw ma-

chines, a full assortment of small and large drill presses, Pratt & Whitney milling machines, Browne & Sharp polishing machines, tapping machines, slotting machines, etc. The plant has been equipped and actual manufacturing has been going on for nearly a month, and the company now is nearly ready to deliver its line of jump spark ignition apparatus. The Willyoung company has within the past 10 days absorbed the George J. Schultz Co., of New York city, manufacturer of the Diamond spark plugs. This plug is made under basic patents granted to George J. Schultz. The Diamond will permit of observing the spark while it is actually taking place in the cylinder during the normal operation of the engine. This is accomplished by the peculiar con-

struction, which amounts to hanging the core in a transparent mica washer which is itself clamped at its periphery in the shell. This, it is pointed out, gives a ring of clear space around the core, which becomes luminous as the spark passes, and cannot be obscured, no matter how much carbon or oil be thrown upon it. Another advantage claimed for this construction and fully as important as the see-through-it feature is the fact that metal does not anywhere touch the core, which is thus relieved of all mechanical strain, does not suddenly change its temperature at any point due to rapid conduction of heat by metal parts, and may freely expand or contract without danger of breaking. To make these plugs a special department has been established and equipped by the company.



# THE READERS' CLEARING HOUSE

## OTHER SIDE OF THE CASE

New York—Editor Motor Age—The Supplementary Spiral Spring Co. of New York has asked me as its attorney to address a few words to you in answer to a letter recently inserted in the columns of your paper to the effect that a firm in New York is dealing unfairly with a certain Missouri corporation, which the writer of the letter represents. In the first place permit me to inform your complainant that the very name "Supplementary Spiral" was copyrighted by and belongs to one who has no connection with the Missouri concern. This copyright, I am informed, was procured prior to the formation of the Missouri company. Whether the persons who formed and promoted the latter company knew before they selected a name for their corporation of the copyright is more difficult to prove than that they actually did know that the owner of the copyright had used the name and had appropriated it in other ways. But did the Missouri corporation ask the owner of the name for permission to use it? The Supplementary Spiral Spring Co. of New York did ask for that permission and paid the owner for granting it. This, then, is the first example of what your correspondent terms "the fraudulent use of our name." You no doubt know of the law in New York which provides that a foreign corporation seeking to do business within the state of New York must file a certificate and pay certain fees and taxes. It is evident that the corporation of your Missouri correspondent has done neither of these acts preparatory to opening the branch in New York, which he mentions in his letter, for the secretary of state would not accept the certificate of a foreign corporation bearing a name the same as that of ours, a domestic corporation. This, then, is the second example of what your correspondent terms outrage. Corporations which do pay taxes will be pleased to learn that this matter has already been referred to the attorney general of the state. I am informed by the president of the Supplementary Spiral Spring Co. of New York that the output of his factory is clearly stamped with the name of the patent under which it is manufactured, that this patent was procured in 1893, and that his company has a right to manufacture under that patent by reason of a license from the patentee. The patent of your correspondent's company—I have a copy of the papers before me—was obtained December 19, 1905. Small wonder that your correspondent says that the matter of patent infringement has not yet been taken to court. I am sure you will be pleased to be able to communicate these facts to your readers. What I have writ-

ten is for the most part a matter of record which can easily be verified by any one who cares to take the trouble. I trust you will give this the same publication as the letter it answers.—Charles W. Gerstenberg, attorney for Supplementary Spiral Spring Co.

## ILLINOIS' NEW LAW

Chicago, Ill.—Editor Motor Age—In the last issue of Motor Age I noticed a short description of the new state motor vehicle law and wish more information regarding it. The article states that the owner must furnish his own tags, one for the front and one for the rear of the machine, in addition to a tag to be furnished by the secretary of state. Does this mean that motorists will now have to carry three tags? What size must these tags be, if so specified in the new law? Must the tags answer any certain description? Must a license be taken out each year, as is the case in Chicago? How should a letter be addressed to the secretary of state? I think an answer to these questions in the columns of the Readers' Clearing House will be appreciated by many of your readers.—E. G. Stewart.

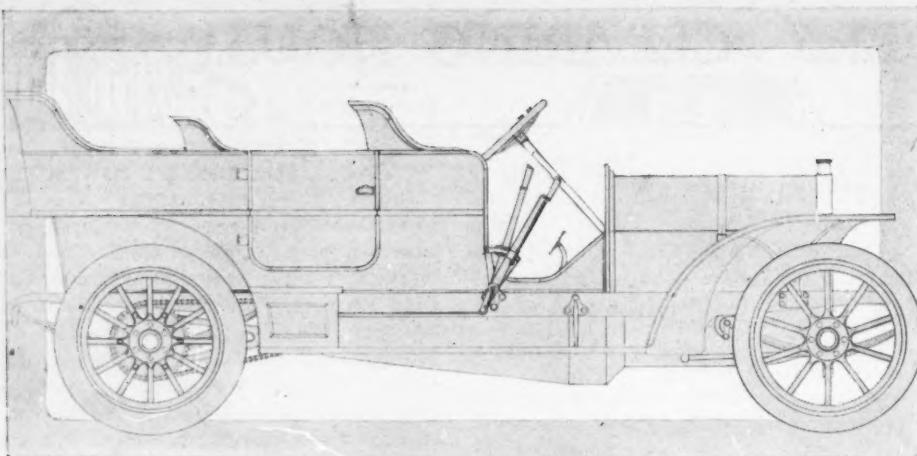
Chicago, Ill.—Editor Motor Age—Will you please inform me through the Readers' Clearing House whether there is any provision in the new Illinois motor vehicle law for the licensing of chauffeurs, and, if so, what is the age limit? Is there any examination to be taken before a license can be secured?—Subscriber.

Two tags must be carried—one in front and the other in the rear. The third one referred to by Motor Age is a metal seal not exceeding 2 inches in diameter on which the registration number is stamped. The other tags must be purchased by the owner of the car registered, and the numbers must be not less than 4 inches in height and each stroke to be of a width not less than half an inch. In addition the letters "Ill." must be on each tag. The numbers and letters must be black on a white background and the letters not less than 1 inch in height. Numbers also must be carried on the lamps. It will not be necessary to take out a Chicago license after this year. The law does not say a license shall be taken out each year. A letter addressed "Secretary of State, Springfield, Ill., " will reach the proper official. A chauffeur—who is described as a person operating a car as a mechanic or for hire—must file a blank with the secretary of state, giving name, address, name and power of the car he operates, and pay a fee of \$1. He is required to wear a badge, with a number thereon, the badge to be furnished by the secretary of state when the license is issued.

## CAUSE FOR LOSS OF POWER

Peoria, Ill.—Editor Motor Age—My two-cylinder car has never developed satisfactory power, and I am inclined to think the trouble is in the carburetor, but I am not sure. The ignition seems to be all right. The spark times alike in both cylinders, and apparently there is no leakage of current. The carburetor is supposed to be automatic and it works well enough at slow speed, but the car will not run fast when the carburetor is adjusted to pull well at low speeds. There is also some tendency for the motor to overheat.—E. W. Bosworth.

Apparently the trouble is due to one of three things. It may be the muffler is clogged, which would account for the failure to attain high speed and for the overheating of the engine. Or, if the exhaust valves do not open sufficiently, the same effect would be produced. The correct timing of the exhaust valves has been mentioned frequently in the Readers' Clearing House columns. The valves should open about 35 to 45 degrees before the outer dead center and should close shortly after the crank has passed the inner dead center. The lift of the valve ought to be about a fifth of the diameter of its opening, although less than this will suffice if the valve is of ample size. If the valves and muffler are all right, it is probable the carburetor does not get sufficient air. It is assumed the inquirer has already modified the automatic air valve in every available way without result. In this case the only recourse is to admit additional air above the carburetor. A simple way of doing this, which does not cost much to try and can readily be suppressed in case the experiment is not successful, is to thread a fairly large pet cock into the mixture pipe above the carburetor and to attach a lever to the valve so that it can be closed for starting and opened from the seat in approximate proportion to the opening of the throttle. If it can be connected directly to the throttle by some simple linkage, this would undoubtedly be a good arrangement, as the throttle does not need to be more than slightly open for starting. Before purchasing this pet cock it would be well to drill the opening for it and fit a temporary sleeve—thin brass or even cardboard will do—over the opening so as to experiment with different apertures at different speeds. It may be worth while to mention that very good results have sometimes been attained by fitting two or three sheets of wire gauze to the carburetor just above the spray nozzle. These sheets should be a fraction of an inch apart, and are intended to diffuse the air and gasoline more thoroughly.



TINCHER SEVEN-PASSENGER TOURING CAR

FTER QUIETLY manufacturing its half-dozen cars a year at its Chicago factory for several seasons the Tincher Motor Car Co. has at last struck its pace and is well advanced on a first lot of eighteen 1908 cars, the first of which was completed some weeks ago and is now doing its work-out on the Hoosier roads. This activity follows upon a reorganization of the company, the capitalizing of it at \$200,000 and the securing of a four-story factory at South Bend, Ind., which the company took possession of last January. Work on the first lot of cars has been delayed by the slow arrival of material, much of which comes from the Krupp factory in Germany and carries the now well-known name of chrome nickel steel. In Krupp language it is designated brand E-F-60. Although manufactured in a new home, the present Tincher carries a few of the marks of Tincher construction of past years, but so many new features have been added and so great a difference in the actual appearance of parts has been arrived at by the use of chrome nickel steel that the Tincher enthusiast would look twice before recognizing the new model as a Tincher produc-

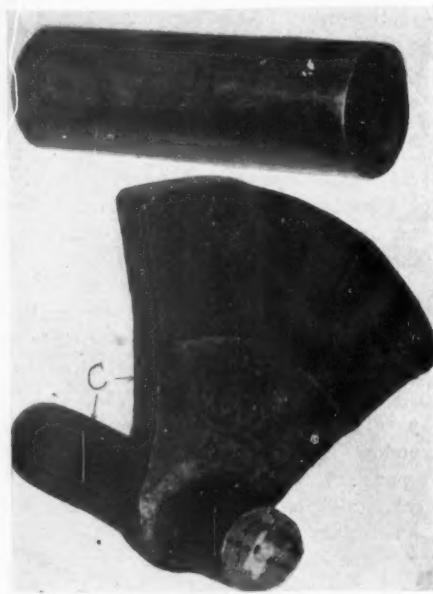
## The Tincher Car

tion. The car is a 50-60-horsepower proposition, with a four-cylinder motor of 5 and 6-inch bore and stroke. The body, fitted for seven-passenger accommodation, is mounted on a chassis of 127-inch wheelbase which has standard tread, side-chain drive, weighs 3,000 pounds with body and carries 36-inch wheels with 4 and 5-inch tires in front and rear. The car has a double ignition system, one of which is an imported magneto. Out-of-the-ordinary features are an overhead camshaft, one cam for opening intake and exhaust valve for each cylinder; magneto mounted crosswise in front, band clutch with 6-inch band, four-speed selective gearset, and high-tension distributor for battery ignition system. In keeping with modern practice is the general use of Krupp chrome nickel steel in front and rear axles, transmission and jackshafts, transmission gears and springs. Noticeable is chrome steel for the crankshaft and camshaft of the motor and frame. The motor valves are a 35 per cent composition of nickel steel. Conspicuous from a manufacturers' viewpoint is the preponderance of home manufacture in the car, the following parts being of home production: Motor, clutch, gearset, axles, steering knuckles, steering gear, brake hubs and chain sprockets, carburetor and water pump. All of the gears except the bevels are cut and hardened at the factory. Where drop forgings are used the entire task of reducing these to the finished article is part of the work of the factory. In no part

# MOTOR CAR

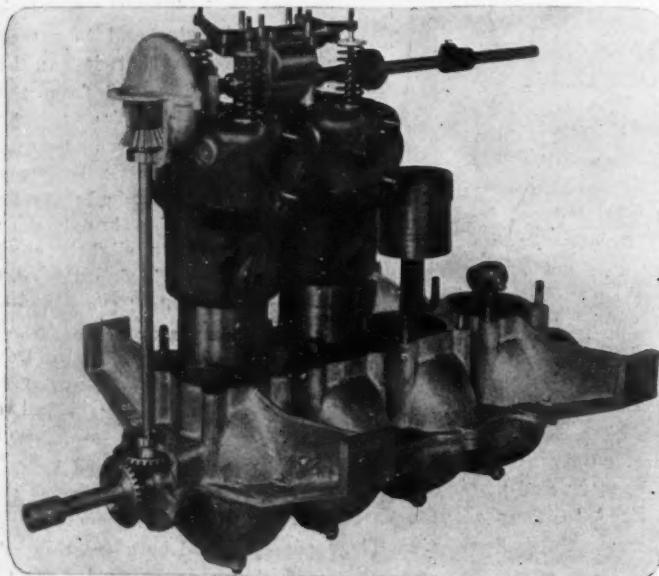
of the car is effort being saved, the company's aim being the production of a high-class and necessarily high-priced touring car of good capacity.

The main frame, comprised of a pair of chrome nickel channel section side members, has these pieces made with a vertical depth of  $4\frac{1}{8}$  inches amidships, with a gentle fore and aft taper, and with channel lips 2 inches wide except midway between the axles, where they are increased to  $2\frac{3}{8}$  inches. Tying these side members together are four cross pieces, three of which are parts of the frame, being hot riveted to the side members. Two of these carry the transmission—one at the front end, the other at the rear. The third, forming the rear end of the frame, is



STEERING GEAR FORGINGS

placed directly above the rear axle instead of to the rear of the axle, and where the spring irons emerge from the frame side pieces. The fourth cross piece is a manganese bronze casting forming a bed for the radiator as well as furnishing a bearing for the starting crank. Additional strength is imparted to the frame by filling the side channel pieces with white ash members, these members extending from the forward end of the motor to the cross piece in front of the gearset. They are considerably thickened where the side pieces are given a  $1\frac{1}{8}$ -inch offset at the rear of the motor. The width between the side members where the motor is carried directly on them measures 27 inches. Supporting this framework on the axles is a set of four semi-elliptic springs, the rear pair shackled to the frame at both ends.



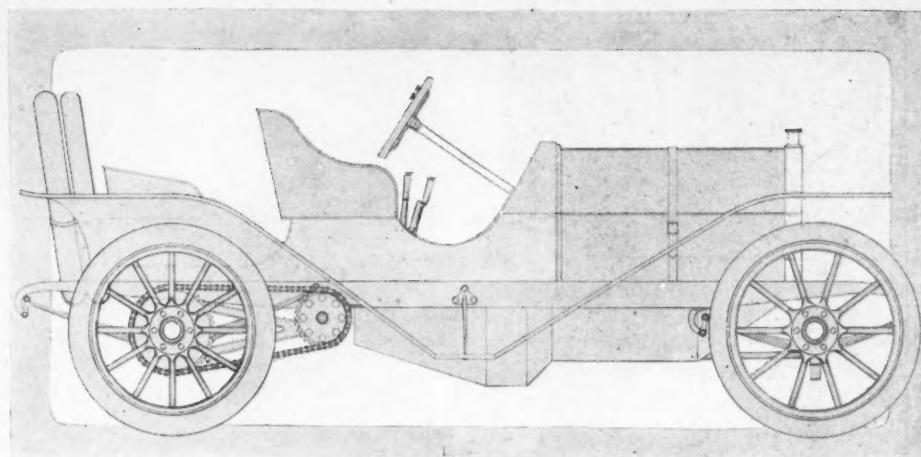
CONSTRUCTION OF TINCHER 50-60-HORSEPOWER MOTOR

# DEVELOPMENT



The front pair, however, is shackled at the rear end only. These front and rear springs have respective lengths of  $36\frac{1}{4}$  and  $52\frac{1}{2}$  inches, are made with 2 and  $2\frac{1}{4}$ -inch leaves respectively and employ seven leaves in the front pair and ten in the rear. Both axles are I-beam weldless constructions of Krupp chrome nickel steel. In the present run of eighteen cars these axles are not forged with the side channels, giving the I-beam effect, a fact which necessitates the company milling the required channels, a work requiring from 6 to 8 hours on each axle and which improves the appearance of them as well as reduces the weight decidedly.

The forward axle, formed with integral vertical hub endings, is not provided with

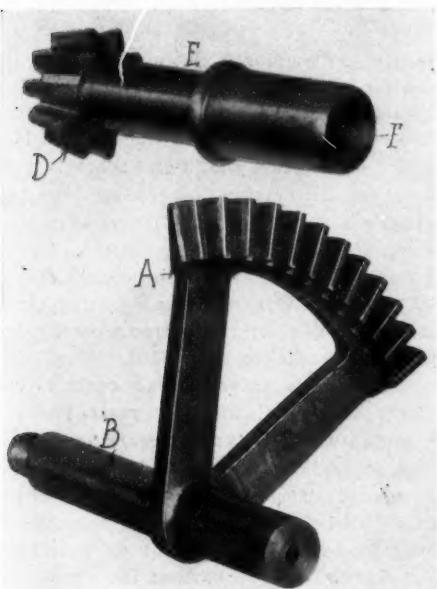


TINCHER HIGH-SPEED ROADSTER

## 50-60 Horsepower

spring seating, this arch giving the rear wheels the same degree of camber, which camber equals that of the front wheels.

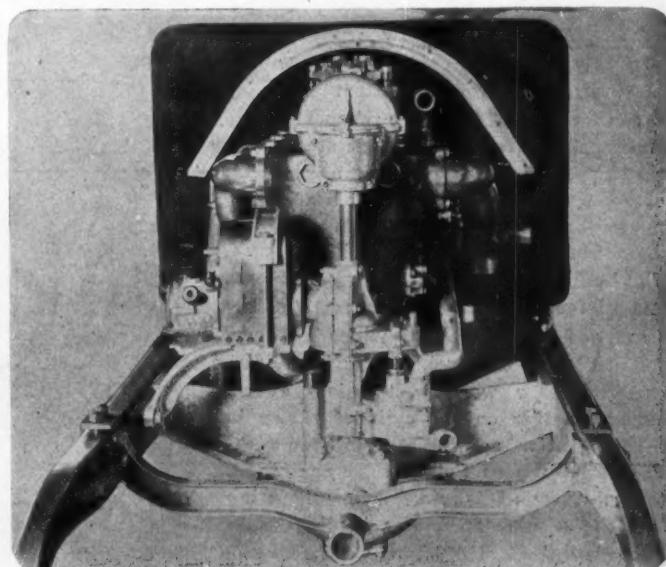
Following accepted practice in stationary rear axle construction, the Tincher designer has dropped the rear axle  $2\frac{1}{2}$  inches immediately inside of the hub bearing. Steering is through a worm and sector gear, the sector A with its shaft B being worked down from an open hearth drop forging C and the gear D cut on its shaft E from a similar forging H. The upper end of the gear shaft is hollow. Into the recess is brazed the lower end of the steering column carrying the hand wheel. The radius arm fits on to the end of the sector axles by taper, key and nut, and on the lower end of this radius arm is the usual ball ending, which fits into a socket carried on the linkage to the tie rod. This ball and socket joint is readily adjustable in that one-half the socket is formed by a retaining nut with coarsely serrated margin so it can be locked in any desired adjustment by a locking screw, the outer end of which rests in these serrations. The steering column proper is a concentric tube construction with one tube carrying the steering wheel, another the stationary quadrant for the spark and throttle levers, and a third forming the connection between the throttle lever. Within this is a  $\frac{3}{8}$ -inch rod carrying the spark advance lever. Connections between the bottoms of the spark and throttle rod and tube are by bevel gears to angling rods connecting with the spark and throttle controls on the



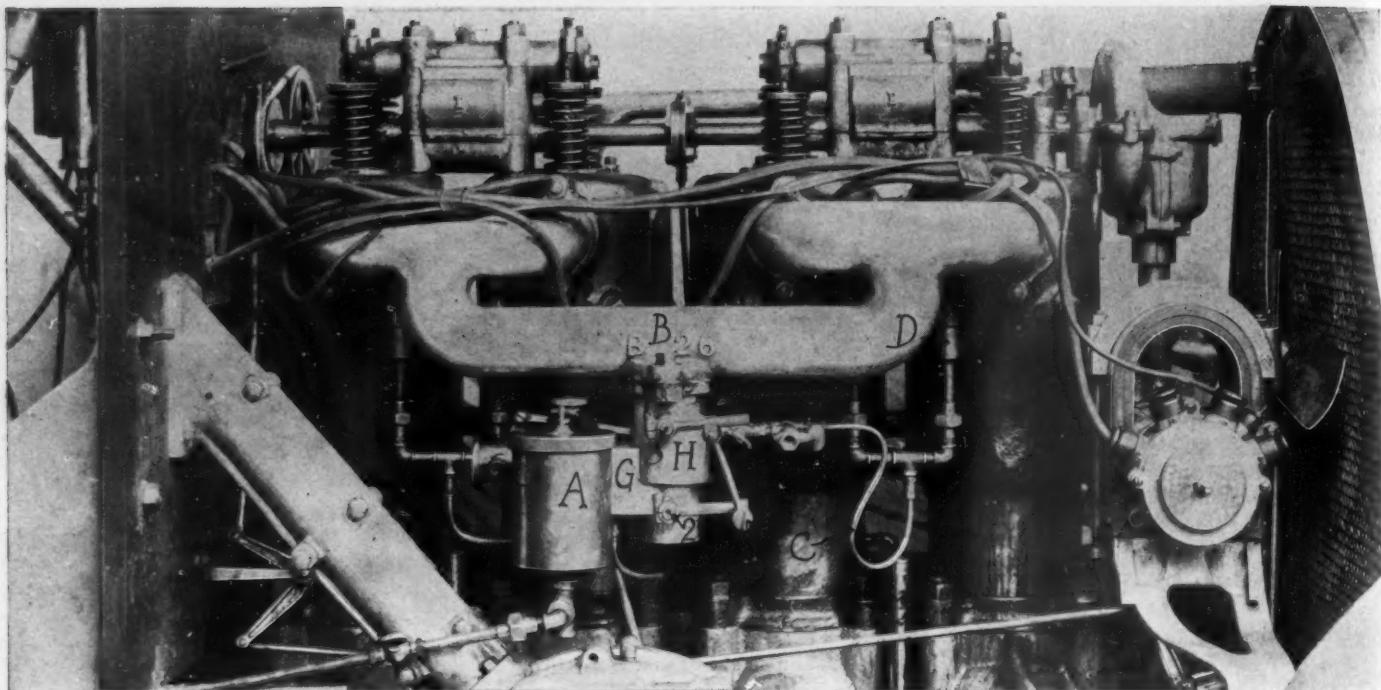
STEERING GEAR AND SEGMENT

integral seats on which the springs rest. Rather the axle is bored with a couple of holes to take the arms of the single spring clip which holds the spring down upon a removable seating fitted on the axle. This construction is used in the rear axle, the single clip being a Mercedes conception. The spindles carrying the front wheels have upper and lower eyelets A and B for spanning the hubs on the ends of the axle as well as taking the 1-inch bolt and hardened-steel bushing C which hold the pivot to the axle. The hole for this bolt in the end of the axle is bored out and the end of the axle is well rounded, forming a perfect fit into the machined end D of the steering pivot. The pivot bolt is bored centrally to conduct the oil to the center of the bearing. Novel in the rear axle is the  $1\frac{1}{2}$ -degree arch it is given between the

motor. Like Tincher motors for the past 4 years, the present 50-60-horsepower one is made with separately-cast cylinders having very small integral valve chambers at opposite sides and in the top of which the valve cages are carried. The copper water jackets of previous Tincher motors are wanting and in place of a valve opened by direct lift from a couple of camshafts carried within the crankcase the two sets are opened by one camshaft located over the cylinder heads. The cylinders are bored and reamed, accepting a lapping with iron as the finishing touch. The crankshaft, a special alloy forging, is made with its end throws set together and with a bearing between adjacent throws. To attain strength the motor is made with the cylinders slightly separated, allowing for very long crankshaft bearings of the following dimensions: Rear end,  $5\frac{3}{4}$  inches long; remaining bearings, 4 inches long with 2-inch diameter and crankpins  $3\frac{1}{2}$  inches long and  $1\frac{1}{4}$  inches in diameter. The five bearings carrying the shaft and those in the lower ends of the connecting rods are split bushings of Parsons white brass, whereas that in the upper end of the connecting rod is bronze.



FRONT END OF TINCHER 50-60-HORSEPOWER MOTOR



INTAKE SIDE OF TINCHER MOTOR, SHOWING CARBURETER AND DUAL INTAKE SYSTEM

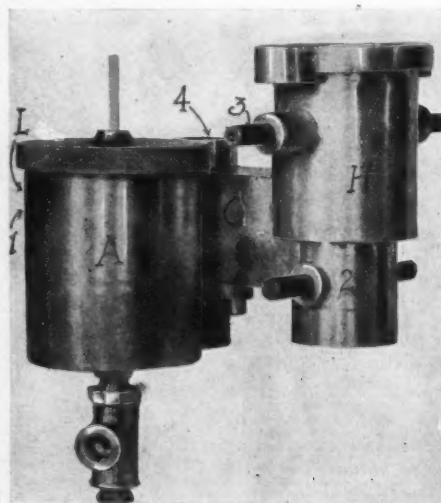
The crankcase is a two-part casting, the upper half with integral supporting arms taking the crankshaft bearings and the lower portion very restricted in size and with a separate compartment beneath each cylinder, forming four oil pockets. Between the compartment beneath the first and second cylinders is a hole for maintaining the crankcase compression. Following Tincher practice, the top half is similarly restricted, giving the case the appearance of four circular expansions, each with a short chimney effect on which rest the cylinders. Pistons carry five compression eccentric above the hollow wrist pin and five oil grooves beneath in.

The interest in the Tincher motor lies in its peculiar valve action and its two-part overhead camshaft. The camshaft is made in two parts with integral end flanges on the opposing ends for bolting the parts together, forming one shaft. Having it in two halves permits of removing one half of it or two cylinders without molesting the other half. The action of opening and closing the valve is best understood from the illustration showing half a camshaft over one cylinder with the valve housing removed and the parts lifted from the cylinder head to show their relative position. The half camshaft A has two end flanges, one A1 for bolting to the other half of the shaft, and the other A2 to which the bevel for driving it is attached. On it are two cams, A2 for working the intake and exhaust valves on the cylinder shown in the illustration, and the other A3 for working the valves on the cylinder next to it. One valve cage B is raised from its seating and the screw cap B for holding it in place is raised still higher, showing the radial tube B3 in which are carried a small spring and plunger, the spring for forcing

the plunger outward to engage in a slot in the cylinder casting to prevent the cage turning in its seating. The irregular-shaped forging composed of the three parts D, D1 and D2, together with the double rollers on the arm D, is for opening the exhaust valve and the arm C with its hollow hub within D1 and its arm C2 is for opening the intake valve in the housing B. One cam A2 opens both these valves. How this is done is further shown in the line drawing in which B marks the cam-shaft with its cam E, the dotted lines E1 and E2 showing the cam in other positions. The exhaust roller is shown at C and C1, its position when the valve is opened, D and D1 showing the intake valve under similar circumstances. The cam E always acts on the rollers C or D on a line connecting the center of the cam-shaft with the center of the axis of rollers C and D, thus giving a regular opening and permit-

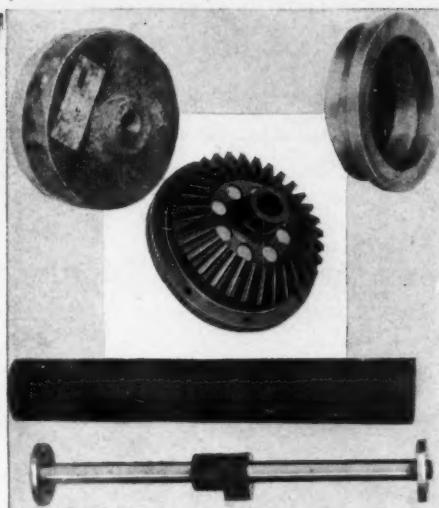
ting of as regular a closing. In order to accomplish the proper opening and closing of the intake and exhaust valves the exhaust valve roller C is made with a  $1\frac{1}{8}$ -inch diameter and the intake roller D with a  $\frac{7}{8}$ -inch diameter. The arm carrying the exhaust roller is  $1/32$  inch longer than that carrying the intake roller. On the exhaust arm double rollers are used because of the greater work done in opening an exhaust than intake valve. This arrangement gives the valves their  $\frac{1}{2}$ -inch lift. The cam-shaft with its valve-opening parts is enclosed in two aluminum covers over the space between the two forward cylinders. The other is in a like position over the rear two. These housings are three-part cages, all held together and to the cylinder head by four bolts. Taking off four nuts and lifting the top part of the casing allows of removing either valve after taking off the valve cap. The cam-shaft halves are cut from solid bars of steel, thereby forming the four cams and flanges integrally.

In its carburation scheme the Tincher car differs materially from conventional lines, all of which is best illustrated in side view of the motor. Here the carburetor with its float chamber A is readily recognized, as is the one-piece manifold B for conducting mixture to the four cylinders; but all the mixture does not pass through the manifold B, a portion going through a  $\frac{1}{8}$ -inch tubing C which does not lead into the combustion chamber but into short vertical barrel-shaped chambers D carried on the side of the intake ports and having a  $\frac{5}{8}$ -inch opening into the combustion chamber. These barrel-shaped chambers have an internal diameter of  $\frac{1}{2}$  inch, a length of  $1\frac{1}{4}$  inch; in their top is carried the spark plug and in the bottom, where they receive the union with the pipe C, is a small ball



DISMANTLED TINCHER CARBURETER

check valve. This pipe C leads from the mixing chamber of the carburetor and is supposed to give sufficient mixture to keep the motor running at a speed of 70 revolutions per minute—when all gas is prevented from going through the pipe B to the inlet valves. The secondary system C is only used when the car is standing by the sidewalk and it is desirable to keep the motor running. When the car is running on the road, however, this secondary system is not shut off, but during such time the major portion of the mixture passes through the pipe B and a very minor portion through the tubing system C. When desired the secondary system can be entirely shut off by a stop cock E and its degree of mixture further varied by a stop cock F which admits atmospheric air. The carburetor, besides its float chamber A already referred to, has a horizontal chamber G to the rear of the float. At the right of this chamber is the mixing chamber H and to its left an auxiliary air opening. The carburetor has four controls, designated respectively 1, 2, 3 and 4. All of these are interconnected so the movement on the steering column produces a predetermined action of each. At No. 1 is a butterfly throttle for the control of auxiliary air; No. 2 marks another butterfly valve controlling the direct air entrance; No. 3 is a third butterfly in the mixing chamber H, forming the main throttle controlling the mixture's passage to the motor, and No. 4 is the top of the needle valve, which is given a 30-degree rotation every time the throttle is opened to the full. The relative adjustments among these four controls is as follows: With the throttle 3 wide open the main air intake 2 is three-quarters open and the auxiliary air intake 1 seven-eighths open. At the same time the needle



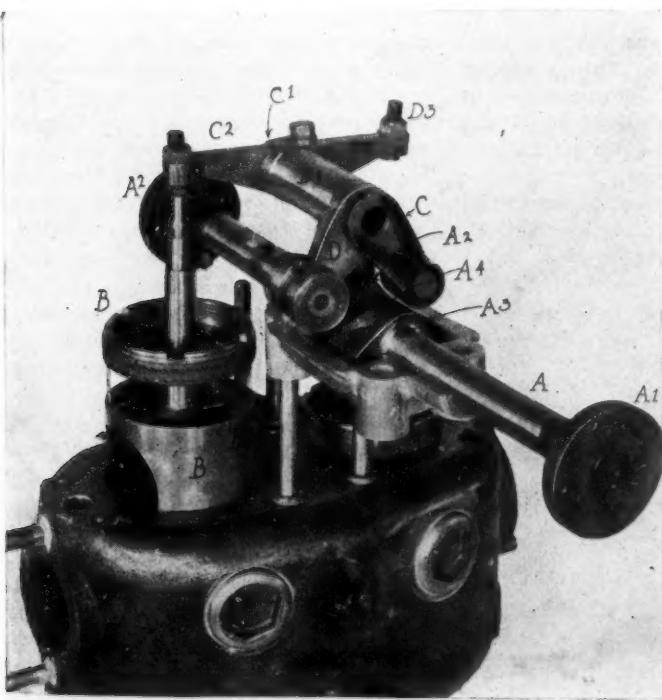
BEVEL GEAR AND CAMSHAFT STORY

valve 4 has completed its 30-degree revolution and is raised out of the nozzle by means of its  $\frac{5}{8}$ -inch 11-pitch thread. Among each of these four controls are adjustable linkages, that between throttles 2 and 3 consisting of arms clamped on to the ends of these throttles and connected by an arm with adjustment M so the length of the connecting arm can be varied at will, thereby changing the relative opening of 2 and 3. Thirty-two gallons of gasoline are carried in a tank on the rear of the chassis, 2 pounds of pressure being regularly exerted on the fuel in the surface of the tank, forcing it to the carburetor. For attaining this pressure after filling the tank a hand pump on the dash is used. The cubical box G in the carburetor has a false bottom midway of the box's height and in cold weather the lower compartment is filled with warm water from the cylinder jackets.

In lubricating the motor a four-feed Mc-

Cord oiler mounted on the left side of the rear face of the dash and wire belt-driven off the rear end of the camshaft delivers oil to the second and fourth crankshaft bearings, the output of two leads going to each of these bearings. The crankthrows in the crankshaft are drilled so oil is delivered by centrifugal force to the lower ends of the connecting rods and passing through these goes to maintain the oil splash within the crankpit. The McCord oiler is supplied with lubricant from a 3-gallon oil tank carried Mercedes-like outside of the car frame on the left side. Exhaust pressure is used in connection with this tank so that by turning a stop cock the oiler can be filled from this tank at any time. Carried also on the dash is a hand plunger pump for taking oil direct from the 3-gallon tank and shooting it into the crankpit.

Two sets of ignition are fitted, one a magneto, the other a battery, but both using the same set of spark plugs. The magneto system centers about an imported Gianoli high-tension magneto placed transversely at the left front and driven by bevel gears off the vertical shaft driving the camshaft. The magneto is carried on a special bed supported on the car frame and the crankcase and is secured thereon by horseshoe clamp fitting over the permanent magnets together with bolts and nuts, the bolts holding between the horseshoe clamp and the bed piece. On this magneto is a high-tension distributor intended for distributing the current to the plugs, but the Tincher company does not use it, preferring to carry a Leavitt high-tension distributor on the rear end of the camshaft and seen by the driver through a hole on the dash. From the magneto a wire leads to a high-tension switch on the dash and from this another to the distributor and from it



TOP OF TINCHER CYLINDER, SHOWING VALVE ACTION

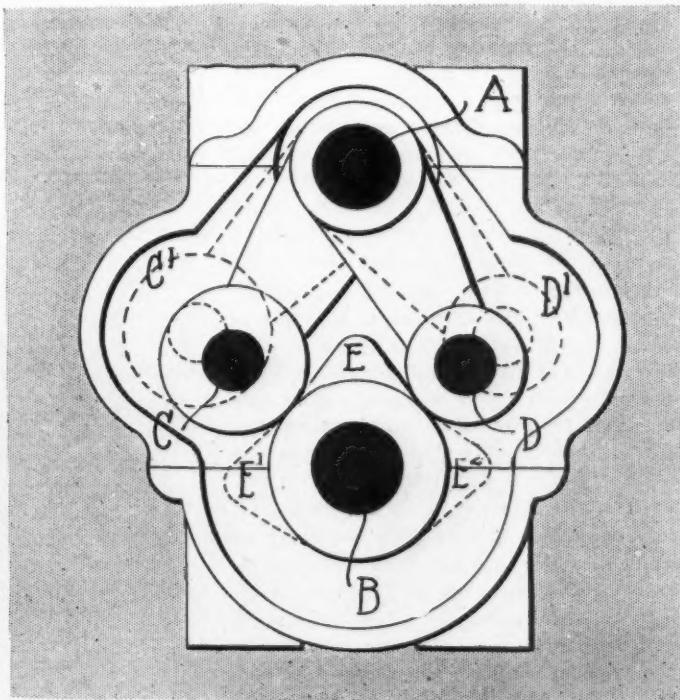
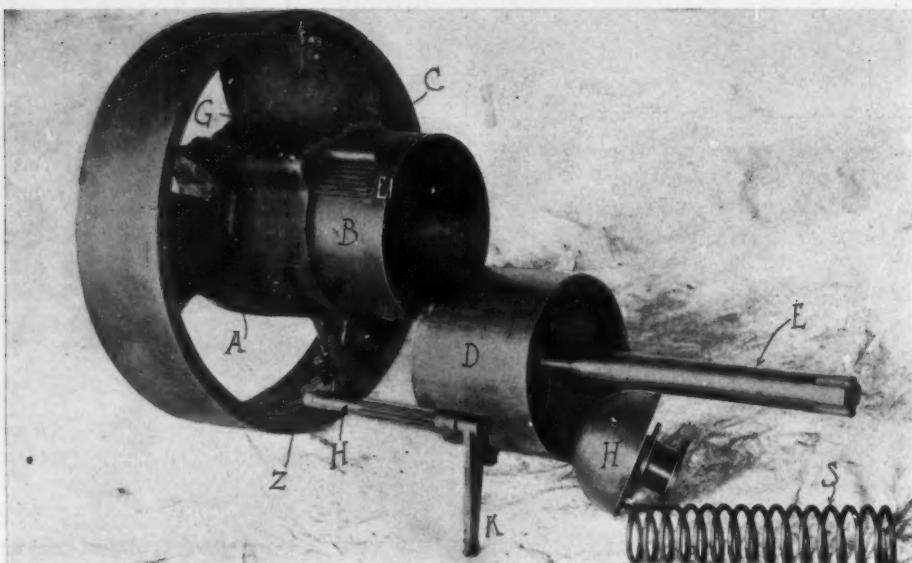


DIAGRAM ILLUSTRATING TINCHER VALVE ACTION



GENERAL ASSEMBLY OF TINCHER CONTRACTING BAND CLUTCH

four high-tension wires connect with the four spark plugs. In the present illustration showing the intake side of the motor these wires lie along the intake valve chambers, but the cars will have a fiber tube carrying all four wires to the plugs. The battery system includes a storage cell with wire to a Gianoli single coil, thence to the high-tension switch and on to the Leavitt distributor and finally along the four wires to the plugs. The company uses a Leavitt distributor in place of that on the Gianoli magneto, as it is possible to get along with but one set of spark plugs, whereas two sets would be needed if the magneto distributor were used. The company is averse to carrying spark plugs other than vertically and in a motor with valves in the head ample room for two sets of plugs is wanting.

When valves are carried in the cylinder heads or in the tops of small integral valve chambers the securing of good water space surrounding them is a prime essential. A 1-inch water space is obtained in the cylinder heads immediately surrounding the valves. Between the intake and exhaust valves is a much wider space. Water enters the jackets beneath the exhaust valves through a flat Y-effect pipe, one arm lying close to the front two cylinders and the other to the rear two. This pipe is 1 inch in diameter. The entrance to the jackets of the middle cylinders is a  $\frac{5}{8}$ -inch opening and that to the end jackets  $\frac{3}{4}$  inch, the different sized openings being to give an equal force of water to all four cylinders. The return water pipe leaves the cylinder jackets above the exhaust valves, passing direct to the top of the horizontal tube radiator. The radiator tubes, of very small diameter, are arranged horizontally, pointing front and rear like the Lozier and a few other radiators. The centrifugal water pump is mounted at the left side of the vertical shaft at the forward end of the motor and is gear-driven from the shaft. Its revolving bucket is a bronze

runner or bucket wheel A, to the sides of which are sweated the disks B and C, thus completing the bucket wheel part. The aluminum housing is in halves D and E, so arranged to take the water in from the radiator base through a hub orifice D1, seen in the half marked D, and to exit it through a peripheral opening E1 in the other half.

For several years a clamping band clutch has been used on Tincher cars. This clutch must not be associated with many other styles of clamping bands, in that its clamping band is of small diameter but excessive width. This appears best in the assembly of the clutch, in which the 20-inch flywheel, which bolts to a 6-inch flange on the end of the crankshaft, carries a very deep and long-diameter hub A in which is seen the clamping band B anchored to the flywheel by a boss C, 4 inches in length and carried on one end of the split band B, so whenever the flywheel revolves the clamping band B revolves. This clamping band is made from crown steel hardened in oil and has its inner surface bored and turned. Its length measures 6 inches and its radial thickness  $\frac{1}{8}$  inch. Fitting within this clamping band is a manganese bronze drum D attached to the transmis-

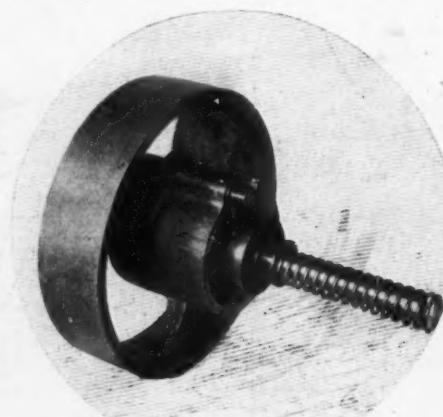
sion shaft E through an integral flange on the latter shaft. This bronze drum is made 6 inches in length and  $\frac{1}{4}$  in thickness. Next follows the manner in which the band B clamps the drum D, thereby establishing connection between the motor and the gearset. On the free end of the band B can be seen a rack of six teeth E1, each tooth being 4 inches in length. In the hub of the flywheel is a hole G adapted to receive the rod H on which is a quadrant of teeth for meshing with those E1 on the band B. On the end of this rod is an arm K, on the end of which is fitted a ball. With this rod H inserted in G and its teeth meshing with those E1 the reader will note that a part revolution of the arm K to the right caused by the cone H would draw the loose end of the band B towards the boss C, thereby tightening the band on the drum D. This movement is accomplished through the cone H which fits over shaft E and the spring S. The cone H bears upon the ball ending of the arm K so when the spring is forced in it in turn forces the arm K in the direction indicated heretofore. On the front side of the flywheel an arm is attached to the knurled end Z of the shaft H and to this arm a small spring which tends to release



TINCHER WATER PUMP CASTINGS

the band B immediately the clutch pedal is pressed for disengagement. The forward end of drum D is carried on a race of ball bearings which is lubricated by boring the rear end of the crankshaft, the oil feeding through this bore into the bearing and the overflow entering between the band B and drum D furnishing sufficient lubrication for these members. Provisions are made for the exclusion of dust.

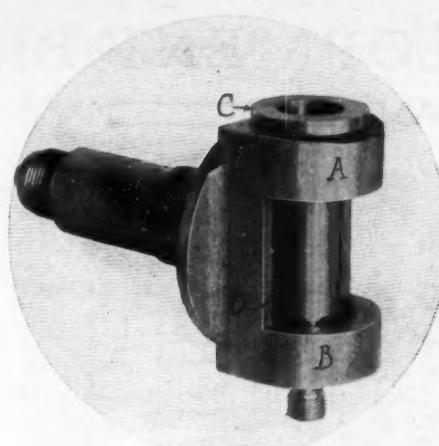
Although the use of a selective transmission is not new in Tincher cars, the adoption of four forward speeds with direct drive on the fourth or highest is. Conspicuous in this gearset is the use of chrome nickel steel in the shafts and gears and the carrying of main and countershafts on races of annular ball bearings, there being a double race of balls at both ends of the mainshaft but single race bearings at the ends of the countershaft. All of the gears are cut in the Tincher factory from blanks of Krupp steel and an example of the amount of work needed and the amount of metal cut away is shown by the fact a gear blank weighs 77 pounds. When completed the gear weighs  $13\frac{1}{4}$  pounds. All gears are made with five-pitch and  $1\frac{1}{8}$ -inch face. The two sliding sets on the main shaft work on four integral keys on the shaft and all large diameter gears



TINCHER CLUTCH ASSEMBLED

of the set are of the ring type and attach to integral flange shafts. The gears are not bolted to one side of the flanges; rather the hub of the gear fits over the flange and by means of four keyways in the flange and four corresponding ones in the gear hub the two are locked together by eight bolts passing through the keyways of the flange and gearhub. To facilitate dropping into high or direct drive one set of dental face teeth is beveled off, but to prevent disengagement when the car is coasting the opposite side is retained straight.

Gearshifting is accomplished by one lever working in a one-slot quadrant, but which has three vertical positions. The lower position is a short half-slot for the reverse, access to it being by use of a press button on the top of the change speed lever. The intermediate slot has a forward and back position for fourth and third speeds respectively and the top slot also possesses two positions, the rear one for slow speed and the forward for second speed. In getting from the top slot to the middle or top the change speed lever is dropped vertically by grasping with the hand and lowering it, a task easily accomplished. It is lifted to go from third or

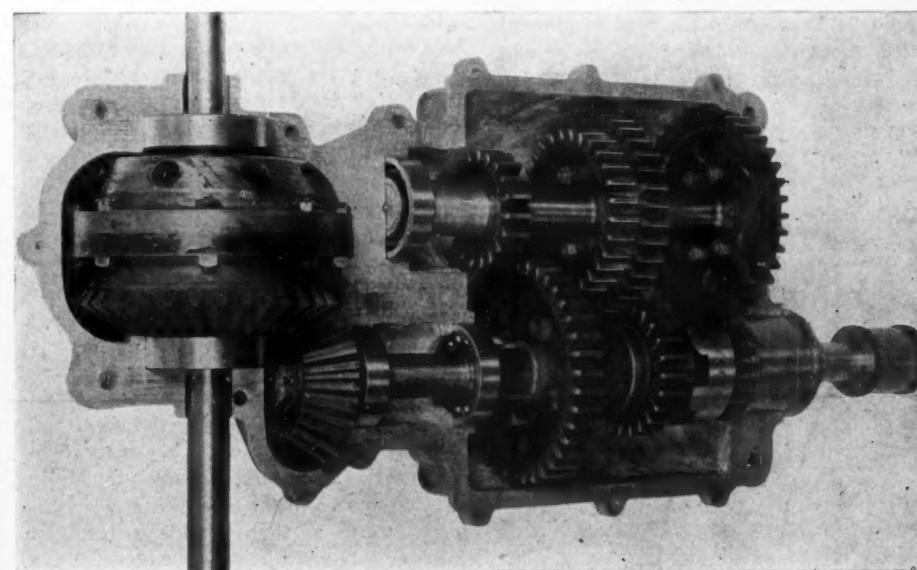


TINCHER STEERING PIVOT

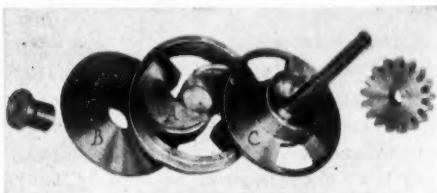
fourth speed to first or second speed but drops when falling again to the third or fourth. The connection between the bottom of the lever and the three shifter rods which are placed one above the other to correspond with the three-slot quadrant is a cross lever hinged at its outer end to the bottom of the change speed lever, fulcrumed near its middle and adapted at its inner end to work in the slot in the shifter rods. An interlocker prevents the meshing of two gearsets simultaneously. As in all chain-driven cars the transmission is housed in a central extension at the rear of the gearbox. All parts of this gear are made in the Tincher factory. The jackshaft is a pair of chrome nickel steel drive shafts squared into the differential gears, carried on a race of annular ball bearings and housed in sleeves, thus constituting a floating axle. The gearset housing is a two-piece aluminum compartment. The top half for covering purposes is well webbed across its width and both halves are formed to correspond with the gear contour of the enclosed gears, thus minimizing the case's internal capacity.

#### MOTOR CAR LITERATURE

"A Past Performance" is an illustrated story dealing with the Jones speedometer, and incidentally introducing the new home of these instruments now in process of



TOP VIEW OF TINCHER FOUR-SPEED SELECTIVE GEARSET



PARTS OF TINCHER WATER PUMP

fourth speed to first or second speed but drops when falling again to the third or fourth. The connection between the bottom of the lever and the three shifter rods which are placed one above the other to correspond with the three-slot quadrant is a cross lever hinged at its outer end to the bottom of the change speed lever, fulcrumed near its middle and adapted at its inner end to work in the slot in the shifter rods. An interlocker prevents the meshing of two gearsets simultaneously. As in all chain-driven cars the transmission is housed in a central extension at the rear of the gearbox. All parts of this gear are made in the Tincher factory. The jackshaft is a pair of chrome nickel steel drive shafts squared into the differential gears, carried on a race of annular ball bearings and housed in sleeves, thus constituting a floating axle. The gearset housing is a two-piece aluminum compartment. The top half for covering purposes is well webbed across its width and both halves are formed to correspond with the gear contour of the enclosed gears, thus minimizing the case's internal capacity.

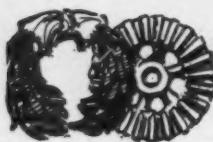
The two sets of brakes provided are located on the rear wheels, where they operate on the same brake drums, the emer-

construction in New York City. A portion of the book is also given over to interesting word sketches on these instruments.

The Locomobile Instruction Book for 1907 ranks well with other books of this class for the present season. The company has selected a wise policy in reducing the size of the pages, making them 4½ by 7 inches, but duplicating the number of pages, ninety-two being necessary. The book abounds in line illustrations which show every detail of construction with which the owner of a car should be familiar. The reading matter and instructions are arranged in chapter form, each one dealing with a particular phase of car operation, there being in all eighteen chapters. A suitable index is included.

"White Book No. 3," issued by the White Co., is a route book covering the main touring route from New York to Boston and from Boston to New York by way of Bridgeport, New Haven, Hartford, Springfield and Worcester. The company pursues its usual policy of making the book in panel size suitable for the inside pocket. Besides giving an accurate detail of the routes, each page carries one or more photographs illustrating important turns in the road. In the center is a large map of the district covered with the route marked in heavy black and having the names of all the places passed through indicated thereon. In the back of the book is a blank page for notes.

The Gearless Transmission Co., in its first catalogue, follows custom by illustrating its completed cars, showing top and side views of chassis and side views of motor. An interesting part of the book is the last four pages, in which are minutely described the new form of gearless transmission in which friction disks and friction wheels as commonly used by this concern are done away with, the transmission system giving two speeds and reverse being limited to a high-speed clutch, a cup,

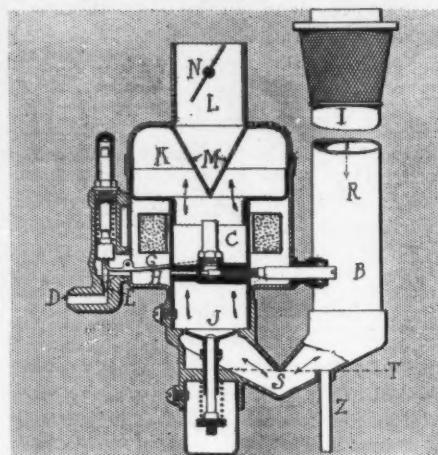


## DEVELOPMENT BRIEFS



### RAMBLER'S NEW CARBURETER

All Rambler cars for this season are fitted with the new Rambler carbureter, which is novel in many respects and which is manufactured entirely at the plant of Thomas B. Jeffery & Co., Kenosha, Wis. A resume of this carburation device is facilitated by a passing analysis of the drawing, showing a vertical section of it in which D marks the entrance of gasoline from the fuel tank, I the screened entrance through which all of the air enters and L the opening through which the mixed gasoline and air escapes to the motor, guarded in its passage by a butterfly throttle N. The gasoline course through the carbureter is first past the bottom of the needle valve E, which occupies a cylindrical compartment to the side of the float chamber, the valve stem having a spring surrounding it to retain it upon its seating. Once past this needle valve the gasoline flows through a short horizontal passage H to the base of the spraying nozzle C and up this nozzle until on a level with the gasoline in the float chamber. Its escape out of nozzle C is controlled by a horizontal needle valve A extending into the carbureter casing and regulated through the end slot B by a common screwdriver. The air entering by way of opening I descends through passage R, rounds the elbow S, passes an automatic air valve J, and rises past the nozzle C, taking up its load of gasoline and thence through the mixing chamber K, filtering through the inverted cone M of the screen and to the motor. The float, of the ring type, is concentric with the nozzle C for the purpose of maintaining a constant fuel level in the nozzle irrespective of whether traveling on level roads or up or down grades. The lever G for controlling the gasoline valve E from the float is pivoted with a short arm acting on the valve and long arm at the float end. The Jeffery

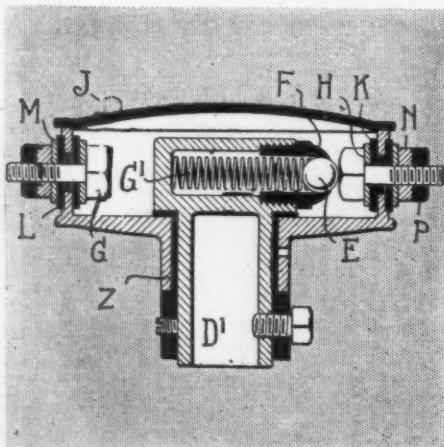


SECTION OF RAMBLER CARBURETER

people point to the nozzle C, drawing attention to the horizontal needle valve A at the base of the nozzle so the nozzle above this is filled always with gasoline which forms a supply for starting. The air intake pipe is designed to facilitate starting the motor in very cold weather. The carbureter can be flushed for any length of time as the overflow gasoline from the nozzle C passes the air valve J and drops into the elbow S of the air passage and accumulates until on the level as shown by dotted line T. When this level is attained air cannot be drawn in without passing through the gasoline at S, as it fills the intake pipe to the top of the elbow before flowing off through the overflow pipe Z. Air directly passing through the gasoline insures a sufficient fuel richness for the coldest days. The screen top of the air inlet I secures fairly warm air during all seasons.

### IS SELF-LOCKING GEAR

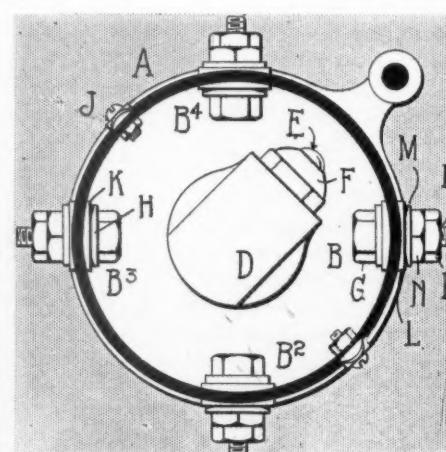
Hawver & Garvin, who have opened offices in the Rosenbloom building, Syracuse, N. Y., are the general sales agents for the United States for the Baker steering gear, which is manufactured by the Baker Gear Co. This gear is a self-locked, ball bearing, dust proof, oil tight device with all the wearing parts steel, the case being of malleable iron. Friction is reduced to a minimum by the ball bearing both below and above spiral gear. The lost motion in the spiral is taken up by adjusting the nut on the bottom of the case and the lost motion in the worm is taken up by adjusting the screw on the nut of the case. The spiral gear is of hard tempered steel and the worm gear with four key-seats tempered not so hard, so as to take practically all the wear. When the worm gear becomes worn so that outside adjustment does not take up all the lost motion, it can be slipped off the crank axle, turned around to another key-seat.



SECTION OF NEWCOMB TIMER

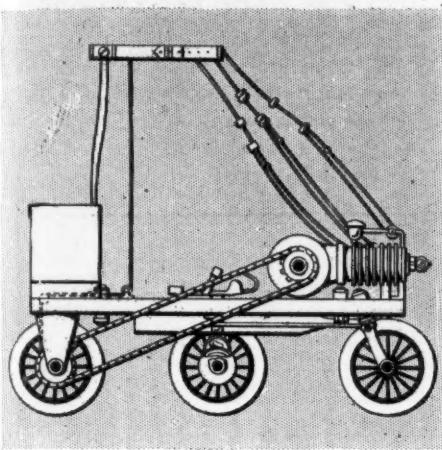
### TIMER AS MADE BY NEWCOMB

A. H. Newcomb, 282 North Robey street, Chicago, is manufacturing on a small scale the Star timer, the plan and vertical sections of which appear. The plan section shows the aluminum casing A containing the revolving part D which carries a  $\frac{1}{16}$ -inch ball E in the end of the arm, a manganese bronze spring G keeping the ball pressed outward into the thimble nut F which acts as ball cage and ball retainer. The four stationary electrodes, designated B, B<sub>2</sub>, B<sub>3</sub> and B<sub>4</sub>, consist of a bolt with large head B against which the ball E strikes. The stud carrying the head B is insulated from the casing C by a thick fiber washer K within the casing housing and bearing upon the washer H at the inside and housing A at the other side. Outside of the housing is a similar washer insulation L which has a hub part resting between the stud and the aluminum casing. Outside of this is a washer M and still further is a lock nut N and lock nut P between which the wire terminal is clamped. In the vertical section is shown the steel washer forming a bearing for the shaft carrying the revolving head D fitting within the hub portion Z of the casing. Fitting on the shaft D<sub>1</sub> is a collar for holding the shaft in position, the collar secured to the shaft by a cup-headed screw. On the other side and diametrically opposite is the setscrew for attaching the shaft D<sub>1</sub> to the motor-shaft for driving the instrument. The cover is clamped on by a pair of lantern clamps J. The timer is regularly manufactured to fit  $\frac{1}{2}$ -inch shafts but can be adapted to  $\frac{5}{8}$ -inch shafts. The contact points are hardened tool steel and the entire case is buffed aluminum made water and dust-tight. The timer's great merit is its simplicity of insulation, nothing more than fiber washers being used as also the ball revolving point which wears very slowly.



PLAN NEWCOMB TIMER

# CURRENT MOTOR CAR PATENTS



MATSON'S MOTOR SKATE

**Four-Wheel Motor Cycle**—No. 854,432, dated May 21; to G. Rothgiesser, Berlin, Germany.—The patentee takes an ordinary motor cycle and places a runner wheel at the right and another at the left, attaching these runner wheels by means of a cross beam hinged at its center to the frame of the motor cycle, the idea being that in rounding corners these runner wheels assist in balancing and allow of a much quicker turn than is possible without them.

**Motor Skate**—No. 854,299, dated May 21; to C. I. Matson, Chicago, Ill.—A three-wheel skate carrying a horizontal single-cylinder air-cooled motor is required for each foot of the skater. The three wheels are arranged in the same vertical plane, the front wheel is supported from the skate through a fork, motor cycle fashion, and adapted for steering purposes, its control resting with a plate on which the front portion of the foot rests. The middle wheel is for ordinary support as well as assisting in turning and the back wheel connects by chain with the motor. A brake also is connected with the rear wheel, its operation being through the heel footplate.

**Compression Relief**—No. 854,035, dated May 21; to J. C. Hansen, Ellehammer, Copenhagen, Den.—Threaded into the cylinder head is a vertical hollow screw plug which establishes direct communication between the combustion chamber and the atmosphere. Closing the lower end of this plug is a poppet valve ordinarily kept closed by a spring surrounding the upper end of its stem but adapted to be opened when starting the motor by means of connections from the steering wheel.

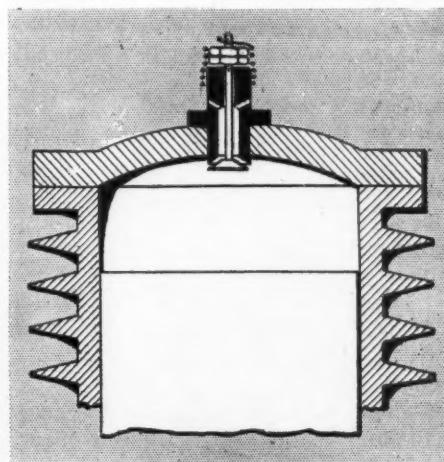
**Wind Shield**—No. 849,242, dated April 2; to G. Hullier, Paris, Fr.—Rising from the ends of the dash of a motor car are two uprights which curved forward at the upper ends. Suspended from the ends of

these curves is a windshield. Attached to the base of the wind shield and angling backward to the top of the dash is a mud splashing curtain.

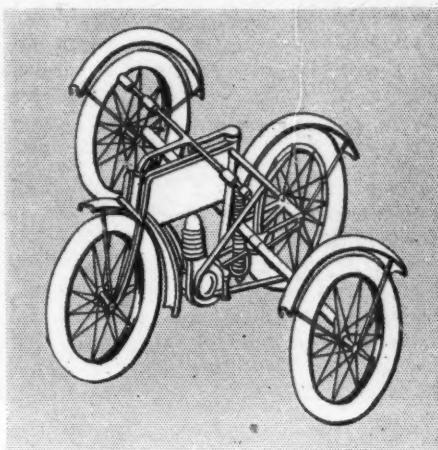
**Sliding Key Transmission**—No. 850,257, dated April 16; to C. H. Schalinger, Detroit, Mich.—This transmission has two shafts, one with a set of gears keyed in place. On the other shaft is a set of corresponding gears loose on the shaft, but constantly in mesh with those of the countershaft. To get different speed variations the gears on the mainshaft are attached to the shaft through what the inventor terms sliding keys. The mainshaft is diametrically oppositely grooved, each groove containing a key which is pivoted at one end to a sliding collar. At the opposite end it has a projection, which end is constantly forced outward by a coil spring. In the hubs of the gears on this shaft are receptacles for receiving those keys by means of which the gears are locked to the shafts.

**Surface Brakes**—No. 850,302, dated April 16; to D. F. Greaser and H. H. Greaser, Pittsburg, Pa.—Everybody is familiar with a farmer's method of braking his wagon on a steep hill by carrying one of the wheels in a metal shoe so the shoe acts as a runner on the ground carrying the wheel. The inventor's brakes are similar in principle to this, but different in operation. Carried beneath the framework is a cross shaft. On the ends of this are arms which carry arc-shaped metal strips. By means of pedal or lever these strips are swung towards the ground in front of the tire so that they come between the tire of the back wheel and the road, thus the tire is lifted clear off the ground and the weight of the car carried on the strips.

**Steering Gear**—No. 851,534, dated April 23; to D. C. Lewis, Philadelphia, Pa.—Attached to the bottom of the steering



HANSEN'S COMPRESSION RELIEF



ROTHGIESSEER'S MOTOR CYCLE

column is a screw with right and left-hand threads. Bearing upon and meshing with one side of this screw is a nut with a left-hand thread and meshing with the screw at a point diametrically opposite is a right-hand nut with a right-hand thread. These nuts at their lower ends attach to the axis of the radius arm so that as the steering wheel is turned in one direction one nut is raised and the other lowered and with an opposite movement of the steering wheel the nuts work in the opposite direction.

**Surface Emergency Brake**—No. 850,414, dated April 16; to J. A. Birdsall, Bethel, Conn.—Pivoted beneath the back axle of the car is a cross shaft carrying a pair of friction shoes. This cross shaft may be oscillated so the shoes are brought to bear upon the surface of the road instead of against a drum carried on the wheels of the car.

**Spring Wheel**, No. 847,817, dated March 19; to J. A. Pomeroy, Palo Alto, Cal.—The wheel hub contains a ring space of circular cross section in which is carried a pneumatic tire put in place by having a removable flange to this portion of the wheel hub. Outside of this ring space is a series of radial cylinders, in each of which reciprocates the inner end of a spoke pivoted to the rim of the wheel at its outer end and provided with an arc-shaped foot at its inner end, which rests upon the pneumatic tire. This spoke is free to slide in and out through the cylinder portion of the hub.

**Shock Absorbers**—No. 852,001, dated April 30; to R. H. Smith, Englewood, N. J.—Between the spring and the frame is interposed a pair of rods, each terminating at its lower end within a box-like casing carried directly on the spring. The rod carries a piston on its lower end and beyond this piston is a coil spring and the rod with a similar piston has a coil spring above the piston.

## A FACTORY SCHOOL FOR CHAUFFEURS



PHOTOGRAPH OF ONE OF THE SESSIONS OF THE SCHOOL FOR CHAUFFEURS AT THE PACKARD FACTORY

DETROIT, MICH., June 3—Motor cars now being vehicles instead of latter-day fads, the education of people to drive them conservatively, as the coachman drives milady's brougham, has become an important feature of the industry. Rapidly and widely it is being demonstrated that the family coachman shall drive the motor car of the man of wealth, or the family hired man shall drive the motor car of the average American. The family man must be educated, and this is no more to his interest than to that of his employer. A human bond between master and man argues that when Bill Smith buys a motor car to replace his brewster green coupe no illustrious chauffeur from Broadway or l'Avenue de la Grand Armee is quite so desirable for pilot of the new conveyance as William, his time-tried horse engineer. Consequently William must learn to drive a motor car. The question puzzling both master and man is, where?

Bill Smith—motor car owner, employer of William, prospective chauffeur—is of more real consequence in the trade than Johnnie Hotspot, who drives a car for the edification of chorus girls and country constables. In fact, some of the motor shops which have grown from experimental places to great institutions, whence appear annually hundreds and thousands of high-class vehicles, have found that the motor is a rational vehicle and not an accessory to the fact in the murder of highway tradition and the upheaval of newspaper columns. They do not care so much about breaking records from Publicity Center to Notoriety Corners as they do about selling Bill Smith motor vehicles which will drive Bill's tired horses to pasture and supply Bill and his family with the best and most effective means of city and country travel, whether this be in the form of theater-going on asphalt boulevards or touring into the fastnesses of New England to find out if one Thoreau knew what he was talking about when he spilled the English language

all over the attractions of the Maine woods in his literary efforts.

To serve Bill Smith it is necessary not only to give Bill a car but to reconstruct Bill's William. Thus at least one motor car manufacturer has taken up the education of chauffeurs for customers' cars. In so doing it has been found that nine-tenths of the students are family faithfuls, come to get mechanical wisdom whereby to make the other half of their life a modern one, unsoled by loose hair from the curry comb. The Packard Motor Car Co., of Detroit, has for some time instructed new owners of cars, owners' sons and embryonic chauffeurs in its factory. The growing number of aspirants to the marvels of the steering wheel and the increasing need that they be systematically and thoroughly taught the basic principles of Packard car operation led to their segregation from the factory proper into a bona fide school. Here they are tutored for a month or so by factory experts that they may go back home to show their employers how simple a thing it is to drive and care for a motor car when one knows how.

The Packard school for chauffeurs is in the factory, but separate from it. It is a large room equipped with car, blackboard, work benches, electrical apparatus, tools, and the lesser impedimenta of an educational campaign. While its resources are ample and exhaustive, it is not a machine shop. Its equipment is purposely limited to facilities such as the motor car driver would have in his own garage and on the road. There is no factory shortcut to fixing a puncture or wrapping a frayed wire. William must do it as he would have to do it should the same thing occur while he is driving Bill Smith along the crag-hewn, boulder-punctured miles of the national pike.

In order to finish his month's course creditably the intending chauffeur must partake of both theory and practice. The instructors tell him of motor car princi-

ples and of the innumerable facts concerning the working of motor accessories. Graphically and simply they explain these things to him in the car itself on the blackboard and with the unassembled car elements. They do not lead him backward into the ancient history of mechanical and electrical theory. They tell him that a certain part operates in a certain way, and when a certain thing happens to it a certain result follows. If he does not believe them that is his fault. It would be folly to endeavor to give away a full and complete mechanical and electrical engineering education in a month. Briefly, they teach him theoretical practice and enough practical theory to afford a foundation for individual research in times when an analytical study of the car will prove better than a general disintegration of its mechanical components.

Electricity is, of course, the great stumbling block on the road to chauffeurdom. It is easier to explain the elusive principle of the differential gear to the untutored owner and the ambitious horse-mechanic, or the modus operandi of the speed change gear, than it is to give them an answer to such questions as "Why is a secondary current?" It would be impossible in a school of this character to delve deeply into the mysteries of electricity. A few well selected experiments and demonstrations are used to show the fundamental principles which are involved in the use of electricity in a motor car. In every case verbal, blackboard and mechanical illustrations are done in the simplest possible way in order to show the absence of complication in practice and to rid the student of the idea that electricity as applied to motor cars is a bugbear at which to shy. Thus the action of an induction coil is shown by means of a wire nail around which is wrapped a few turns of insulated wire to form the primary coil. A second piece of wire, somewhat less in diameter, is wound over the first coil to

form the secondary winding, the terminal connected to a sensitive voltmeter. In this crude apparatus the passing of a heavy current through the primary winding shows a decided induction result as displayed on the voltmeter of the secondary winding. The action of the magneto also is illustrated with the same wire nail and one coil of wire—by revolving the coil in the magnetic field of two permanent magnets. Such experiments as these are interspersed with lectures, blackboard illustration and actual work on the Packard car, which is a permanent feature of the school.

The first 2 weeks of the course are devoted to taking the car apart and reassembling it. All of the students are engaged in this work and there is no part of the machine which does not come under their scrutiny, and whose purpose in the car and relation to other parts is not fully explained to them. In re-assembling all groups of parts, whether small or mechanically consequential, no readjustments to other than normal positions are allowed. In the course of this work the students become thoroughly familiar with the general types of motor car design, and particularly well acquainted with Packard construction. They learn not only the use of the parts but a good deal about their proper care and their relative importance.

Emergency repairs and adjustments form the work of the third week. That the lessons in theory and practice by lecture, blackboard and the tearing down and reassembling of the car may have practical application this entire week is devoted to repeatedly putting the car into good operating order after the instructor has changed the adjustment of some part or other to effect the running of the machine, it being up to the student to discover wherein lies the fault.

In order that each of the thirty to fifty students may have a chance to diagnose the case and apply his own remedy each one is given 5 minutes during which he is the possessor of the machine and may

do to it and with it what he likes. This is amusing as well as instructive work. Casually one would think that the burden of work would fall upon the early experimenters. As a matter of fact, the ones who are late have as much as or more trouble than the man who first tackled the car. By watching the others he has found out what was not wrong but he becomes the doctor of a score of new ills, developed by predecessors who, in their extreme ignorance and by unthinking effort, have changed the wrong thing and did not change it back again. Occasionally when the class has become proficient in locating troubles and the mind of the instructor is taxed for new ways in which to put the car out of order that his students may have difficulty in locating the cause, outsiders from the factory, such as executives, testers and motor experts, are given chances to dislocate the vitals of the machine and, if possible, stump and puzzle the students.

Here is an example of the ways in which is taught the great lesson of the importance of making a systematic search for trouble, instead of merely passing through a brainstorm of mechanical research. On the magneto side of the circuit a wire was loosened and the students were put to work locating the trouble. The first man up noticed that the car would run on the battery side but failed to work on the magneto side. He inspected the wires and, without satisfying himself that the connections were tight, passed the point where the open circuit existed. He failed to locate the trouble, and another man was put on the job. He tackled the commutator, and, not knowing what else to do, made a hasty and entirely unwarranted adjustment. Then he gave up the search. Another man suspected that the wires leading to the coil box were crossed, and without taking the trouble to find out reversed their position, thereby changing the whole system. The next man up noticed that the car would not now run on the battery cir-

cuit. He accordingly went to work on that part of the system and, with no explainable reason, succeeded in placing the battery coil vibrator entirely out of adjustment. In each case, where adjustments were made, there seemed to be a tendency on the part of the student to hurry through the diagnoses and make an attempt to locate the difficulty by the "hit or miss" method, rather than by systematically working on some one part of the car and not leaving that part until absolutely certain that it was in proper adjustment. The work continued until the car was entirely out of adjustment. While the original trouble was simply an open circuit in the magneto primary system, the green students developed the following troubles: Commutator out of time; high tension and low tension wires crossed; vibrator out of adjustment; magneto make-and-break out of adjustment, and several minor ones. These lessons impress the student with the importance, even when time is limited, of studying the symptoms before attempting a change of adjustment.

The last week of the course is devoted to road work, although the prospective chauffeur is not taught the fine points of actual driving. The Packard company believes that experience is the only tutor to proficiency in driving. The road work of the school is consequently a study of road troubles purposely brought about to give practice in spotting causes and results. The student is taught to tell by the way a car stops what is the matter and what to do.

While a large percentage of pupils at the Packard school are coachmen, all other classes of prospective drivers, including new owners, are represented. In watching the students the instructors have found that between average coachmen and mechanics the former make the best chauffeurs. This is a point that has been claimed before, but the Packard school affords the critics a fine chance to make actual observations.



FACTORY OF THE MAXWELL-BRISCOE MOTOR CO. AT TARRYTOWN, N. Y., WHERE TOURING CARS ARE MADE



# AMONG THE MAKERS AND DEALERS



**Rutz Succeeds Parker**—W. A. Rutz has succeeded F. M. Parker as manager of the Buffalo branch of the Continental Caoutchouc Co.

**Will Make Motor Buggies**—It is the intention of the Economy Motor Buggy Co., which has leased quarters in Fort Wayne, Ind., to assemble the parts of a special buggy and equip it with a motor.

**Locates in Wichita**—The Solid Axle Automobile Co., organized in Topeka, has leased a part of the old Burton car works, at Wichita, Kas., and will construct a line of motor cars. L. K. Mannis is president and O. H. Osborne general manager.

**Newmastic Branch Opened**—Victor T. Gannon has opened the Chicago branch of the Newmastic Tire Co. at 302 Michigan avenue. Mr. Gannon formerly was connected with the Orlando F. Weber Co. and C. A. Coey & Co., of Chicago.

**Ford Sales in New York**—Gaston Plaintiff, manager of the New York branch of the Ford Motor Co., says the branch sold during May \$200,000 worth of Ford cars, including 224 four-cylinder runabouts and thirty six-cylinder touring cars.

**Pelton Manager at Buffalo**—C. S. Pelton, who has been with the B. F. Goodrich Co. for the last 5 years—3 years at the factory and 2 in Pittsburgh—hereafter will act as manager of the Buffalo branch of the Pennsylvania Rubber Co. Fred Roblin, who has had temporary charge of the branch at Buffalo, will now return to his work in the motor tire department of the Pennsylvania company's plant at Jeannette, Pa.

**Playing Baseball**—The Automobile Baseball League has been organized in Detroit, composed of teams representing the various Detroit factories. It recently started its regular season and will play a regular schedule, lasting through the summer months. The league contains teams from the Ford, Packard, Cadillac, Thomas, Aerocar, De Luxe, Reliance and Wayne factories. Le Roy Pelletier of the Ford is the moving spirit of the league.

**Auto-Meter Enterprise**—The Warner Instrument Co. has inaugurated a campaign to demonstrate to the authorities of the various cities how farcical the existing speed laws are. The company has made a large auto-meter 9½ feet high. The head of the instrument is 4 feet in diameter and the scale is 10½ feet. The letters are 12 inches in length, and the instrument is attached to a car so even the pedestrians may learn the speed. A recent demonstration was given in New York city, where it was shown how impossible it is to avoid violating the speed laws. A. P. Warner, who started this campaign, declares he is not working against the motorists, but desires to ascertain if some rules and regulations



RUSHMORE LONDON BRANCH

cannot be evolved which will give satisfaction to the public as well as the owners.

**New York Registrations**—The New York registrations for May aggregated 2,209, of which 172 were imported cars. The leaders were: Ford, 222; Cadillac, 143; and Maxwell, 140.

**Milwaukee Dealers Organize**—Dealers in Milwaukee are forming a trade association, a preliminary meeting having been held at which nine concerns were represented. Alfred Reeke, of the Solliday Motor Car Co., acted as temporary chairman and W. L. Hibbard, of the Hibbard Automobile Co., as secretary.

**Will Keep Old Name**—The Crescent Motor Co. has purchased the touring car business of the Reliance Motor Car Co., of Detroit, the latter concern having decided to give all its attention to the commercial line. The Crescent company will keep the name Reliance for its cars, it is announced, and has leased and remodeled the old Buick building, on Champlain street, where it has 42,000 square feet of floor space. The new company is capitalized at \$75,000, \$40,000 of which has been paid in. H. L. Goldman is president, J. J. Kean vice-president and Charles E. Wain general manager.

**Corbin Deal in Boston**—One of the important changes in the New England industry was put through last week, when the Corbin Motor Vehicle Corporation, of New Britain, Conn., organized a corporation in Massachusetts to take over the Boston agency for its cars. The Corbin had heretofore been handled in Boston by the E. T. Kimball Co., and when the new corporation known as the Corbin Car Co. of Boston was organized it bought out the Kimball company. Mr. Kimball, however, retains an interest in the business, and he was made treasurer and manager. B. R. Bassette, of the factory, was elected presi-

dent and E. H. Brandt, another of the factory men, was chosen vice president. B. F. Blaney, who has been associated with Mr. Kimball for some years, is secretary.

**Brock Spreads Out**—The Brock Co., of Cleveland, which builds bodies and does repair work, has just completed a large three story addition to its factory. It is 100 feet long, and includes woodworking, blacksmithing and paint departments.

**Gibson Goes to Indianapolis**—C. S. Gibson, formerly of the Packard Motor Car Co., has left that company to join its Pittsburgh agent, the Standard Automobile Co., where he will act in the capacity of assistant general manager. Mr. Gibson was connected with the Packard Motor Car Co. for 2 years.

**Kenosha, Not Racine**—In recording the fact that Thomas B. Jeffery & Co. are laying the foundation for another new building Motor Age last week stated the plant was at Racine, Wis. As the motoring world well knows, the Rambler factory is located at Waukegan, not Racine, the error being a slip of the pen.

**O'Connor a Jewel Man**—Mark C. O'Connor has accepted the position of purchasing agent for the Forest City Motor Car Co., of Massillon, O. O'Connor was for several years purchasing agent for the Waverley department of the Pope Mfg. Co., at Indianapolis, Ind., and later was with the Marion Motor Car Co.

**Byrider in Control**—The Byrider Electric Auto Co., of Cleveland, has succeeded to the plant and business of the Williams Electric Vehicle Co., of that city. The company is headed by James Byrider, of Akron. The factory is located on East Fifty-fifth street. A line of electric runabouts will be manufactured.

**Roanoke's New Garage**—The Roanoke Auto Co. is about ready to move into its new garage, in Roanoke, Va., where it will have accommodations for from sixty to eighty cars. Besides storing cars, the company will do a rental business, not only in pleasure cars, but commercial vehicles as well, a new departure in the south.

**Maxwell Cornerstone Laying**—Vice-President Charles W. Fairbanks, as guest of honor, will deliver an address and lay the corner stone of the big new Maxwell-Brisee motor factory, at Newcastle, Ind., on Saturday. Besides Vice-President Fairbanks, scores of notables will attend the cornerstone laying. Other addresses will be delivered by Judge Bundy, Charles Hernley and M. E. Forkner. The ceremony will be preceded by a parade of Masonic orders, secret societies and prominent citizens, from the center of the city to the factory grounds. Officers and many associates and friends of the company will be present

from the east. Special Pullman coaches will be attached to the train leaving New York at 5:30 p. m. on June 6 and arriving in Indianapolis at 3:15 the following day, making a 3-hour stop over there and reaching Newcastle at 7:45.

**Will Show File Sharpener**—The American File Sharpener Co. intends being represented at Atlantic City, N. J., during the convention of the Master Car Builders and Master Mechanics, June 12 to 19, showing one of its file sharpening machines and giving daily demonstrations of its operation and use.

**F. E. Sparks Changes**—One of the real veterans of the motor trade made a change last week, when Frank E. Sparks, for 15 years with the Excelsior Supply Co., of Chicago, resigned to become western representative of the Weed Chain Tire Grip Co. In his long connection with the Excelsior company Mr. Sparks climbed from salesman to buyer, and in that time became well acquainted with the motor trade of the country. In his new position he will be located at 166 East Lake street.

**New Searchlight Factory**—Ground has been broken for the new factory and powerhouse for the Rushmore Dynamo Works at Plainfield, N. J. The new buildings, which stand adjacent to the old factory, will be of the most advanced reinforced concrete construction and fireproof. The main building, which at the start will be 250 feet long by 50 feet wide and two stories high, will be devoted exclusively to the manufacture of the Rushmore motor car searchlights and generators. The upper floor will contain the offices and lens-grinding plant, while the lower floor will accommodate the large stamping and drawing presses and usual machine tool equipment. The plans call for the final erection of two additional wings, two stories high, each 200 feet long, so that the ultimate floor space of the old and new plants will be over 85,000 square feet. All the machinery is to be driven by electric motors on the group system, except for a few of the heavier tools, which will have individual motors. The separate powerhouse, which will measure 50 by 50 feet, will be a distinct departure from usual American practice and is to be copied after the best European designs. The equipment will consist of a two-cylinder horizontal 200-horsepower Koerting producer gas engine, which, with the dynamo mounted directly upon its shaft, will weigh over 80,000 pounds. There will also be a similar gas engine unit of 75 horsepower for use in emergencies or overloads on the main engine. Provision will be made for a third engine of 200 horsepower as the business increases. A 10-ton electric crane will span the engine room. Gas will be supplied by one anthracite producer of 250 horsepower and one producer of 75 horsepower capacity. There also will be a complete brass foundry built of reinforced concrete, 50 by 50

feet, one story high. When the new plant is completed the old factory is to be devoted entirely to electric marine searchlights and locomotive headlights. The new plant will represent an investment of close to \$100,000.

**Stearns Still Spreading**—The F. B. Stearns Co., of Cleveland, is erecting a large addition to its machine shop, this being the second addition built this year. The Stearns company started with a small frame building, and now has about covered all the available property in the immediate vicinity of its plant.

**Will Build Big Plant**—The Standard Welding Co., of Cleveland, has taken out a permit for a new factory building to cost \$125,000. A large brick building will be erected, one portion of which will be three stories high and the balance one story. The location will be on the New York Central tracks, between Seventy-eighth and Seventy-ninth streets.

**Reports on Freight Outlook**—T. S. Marvin, traffic manager of the Association of Licensed Automobile Manufacturers, who has been for the past 2 weeks attending the joint conference of the Southeastern Freight Association and Southeastern Mississippi Valley Association, has returned with satisfactory reports of the freight conditions in the South. It has been Mr. Marvin's aim to work with the traffic managers and help them to arrange the transportation of motor cars to afford better facilities for the manufacturers. The conditions which prevail in the far west have not materially changed, and many of the coast dealers are held up in the delivery of cars. The conditions in the east, however, are much better, the railroads seeming to realize the necessity of immediate action in the transportation of motor cars by building extra cars to give better facilities to manufacturers. Mr. Marvin thinks the outlook for the transportation of motor cars next year will be much better, as by the time the 1908 models are ready for shipment the railroads will have completed the extra cars for the exclusive use of motor car trans-

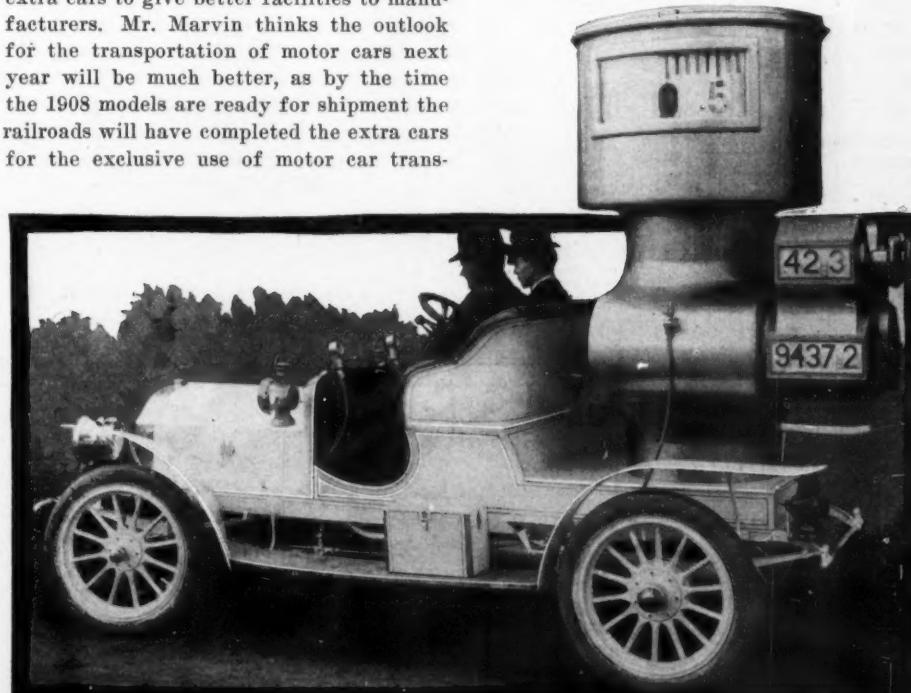
portation which are now being constructed. It is estimated that between 3,000 and 4,000 freight cars are under way now, which, added to the 6,000 already in service, will give better facilities to manufacturers and dealers.

**Newmastic Trip Ends**—Orrel A. Parker, president of the Newmastic Tire Co., in a Royal Tourist, arrived in Chicago Wednesday from New York, the trip being taken to demonstrate the practicability of Newmastic.

**American Napier May Resume**—It looks now as if the American Napier Co. will get on its feet again in Boston. There was a meeting of the creditors recently, and plans were made to straighten out the tangle involving its affairs. If the present plans go through the company will start operations again very soon.

**Changes in Chicago**—In the new building at 1772-74 Michigan avenue are located two new motor concerns—the Baker Electric Vehicle Agency and Adams & Engs. The dissolution of the partnership of Pierce & Isbell is responsible for the former, while Adams & Engs have taken the Frayer-Miller agency formerly held by Jerome A. Ellis. Guy R. Pierce is the general manager of the electric vehicle business.

**New Carbureter Concern**—The Heitger Carbureter Co. has been organized in Indianapolis and as soon as a desirable location can be decided upon manufacturing operations will be started. With a capital stock of \$10,000 the company has been incorporated and in addition to putting a carbureter on the market expects to manufacture engines and motor supplies. Joseph A. Heitger, William E. Clark, William N. Urmey, Julius M. Heitger and George H. Heitger are among those who are interested in the new concern.



IMMENSE WARNER AUTOMETER EXHIBITED IN NEW YORK STREETS

# THE REALM OF THE COMMERCIAL CAR

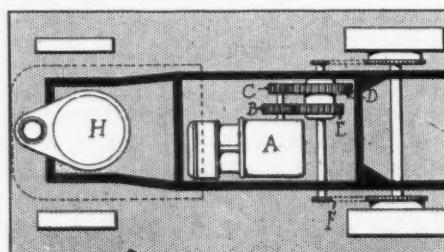


MANN STEAM WAGON WITH TWO-CYLINDER MOTOR AND TWO-SPEED GEARSET

28  
ONCE more Motor Age, in response to numerous inquiries from its readers, presents a general resume of steam wagons as used for heavy transportation in Europe and selects for its example the Mann steam wagon, a machine which has been before the buying public of England for several years and one which has proved its worth for economy and endurance throughout that period. As manufactured at present, steam machines are divided into three classes distinguished as follows: Class one, of which a typical chassis diagram is shown possessing as its characteristic points a vertical fire tube or water tube boiler H; a two-cylinder compound engine A; a two-speed gear transmission, one-speed gears B and E for normal work and the other gears D and C for steep hills, and a differential countershaft or jackshaft with end sprockets, for side chain-drive to the back wheels. Steering is on the Ackermann principle, the front wheels being carried on pivoted spindles on the ends of the stationary front axle as on a pleasure car, and with water feed to the boiler through a plunger pump driven by eccentric or otherwise from the crankshaft. With reference to the vertical boiler it has the advantage of economy of space as it is generally mounted over the front axle and occupies but little of the useful wheelbase of the car. With this style of body it is an easy task to mount all gauges and boiler fittings accessibly. Compared, however, with the horizontal or locomotive type of boiler the vertical is not so efficient or economical.

The second type of steam wagon is that fitted with a loco boiler, meaning, of course, a boiler of the horizontal class and after the lines of those in use on our railroad locomotives. In this second class the engine A, of the compound two-cylinder hori-

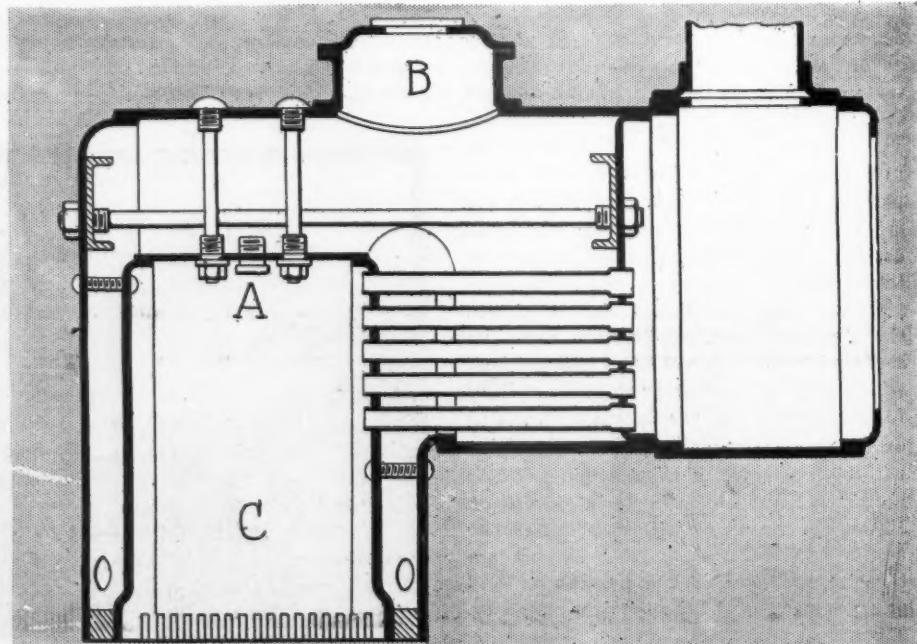
zontal type, generally is carried above the boiler where it is very accessible. Being so far removed from the rear axle an



CHASSIS CLASS ONE STEAM WAGONS

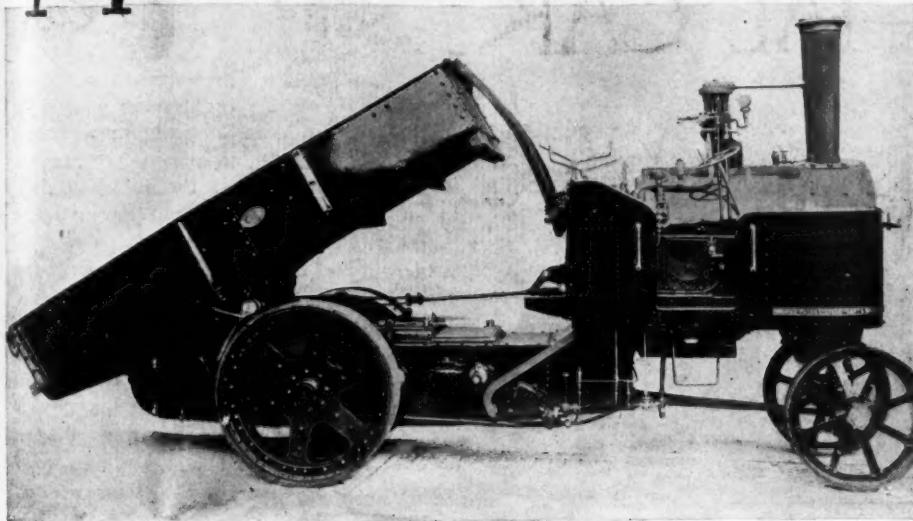
extra long driving chain F is required to which many buyers object. This class of machines invariably is supplied with a

two-speed gearset, consisting of a main-shaft formed as an extension of the crank-shaft to the motor. Paralleling it is a countershaft with gears D and E corresponding with those on the main-shaft to give a low speed for hill-climbing and a fast speed gears B and D for road travel. From the countershaft a single chain F connects with the differential near the end of the rear axle. Traction engine steering is invariably fitted and, for the benefit of the amateur, this consists of a pivoted front axle as found in all horse-drawn vehicles. The advantages of a loco type of boiler consist primarily in its wonderful economy of fuel and water as well as in its great accessibility in that the firebox at one end of the tubes and the smokebox at the front end allow of ready cleaning. Boilers



SECTION OF LOCO BOILER IN MANN 3 AND 5-TON STEAM WAGONS

# Mann Steam Machine

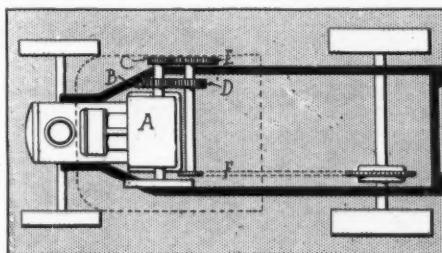


MANN STEAM WAGON WITH TIPPING PLATFORM

of this type are much lighter constructed than the vertical style. Carrying the motor on top of the boiler gives the advantage of a very close steam connection.

The third class of steam boilers includes those using either the vertical or loco style of boiler and having either a pivoted front axle or one with steering knuckle ends. The custom in cars of the third class is to place the boiler well beneath the frame and close in front of the rear axle. Also distinguishing this class is driving from the motor to the back axle through a two-speed gearset and transmitting from this gearset by spur pinion through a differential on the back axle. In this style of wagon the motor is of the enclosed type operating in an oil bath.

The two-speed gearset as well as the spur drive to the differential is enclosed and



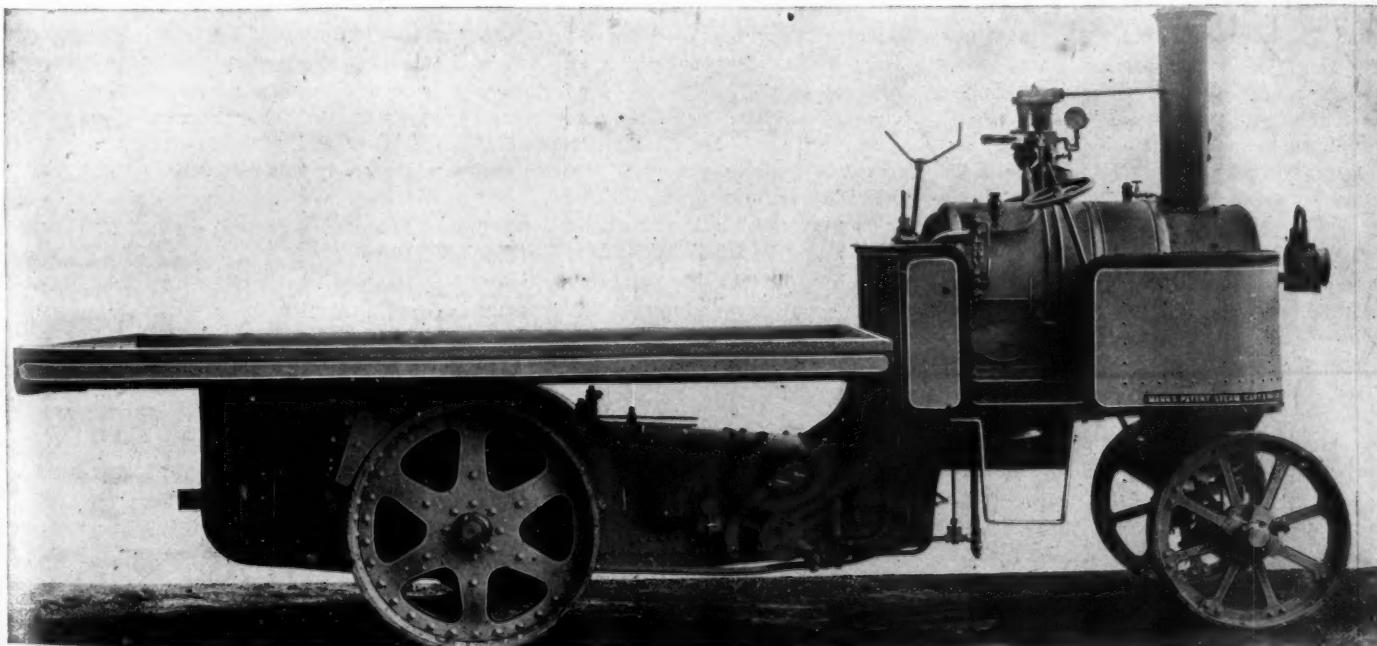
STEAM CHASSIS, CLASS TWO

two-speed gearset and gear-drive to the axle and enclosing them all in oil-tight runs in oil. This grouping of the motor,

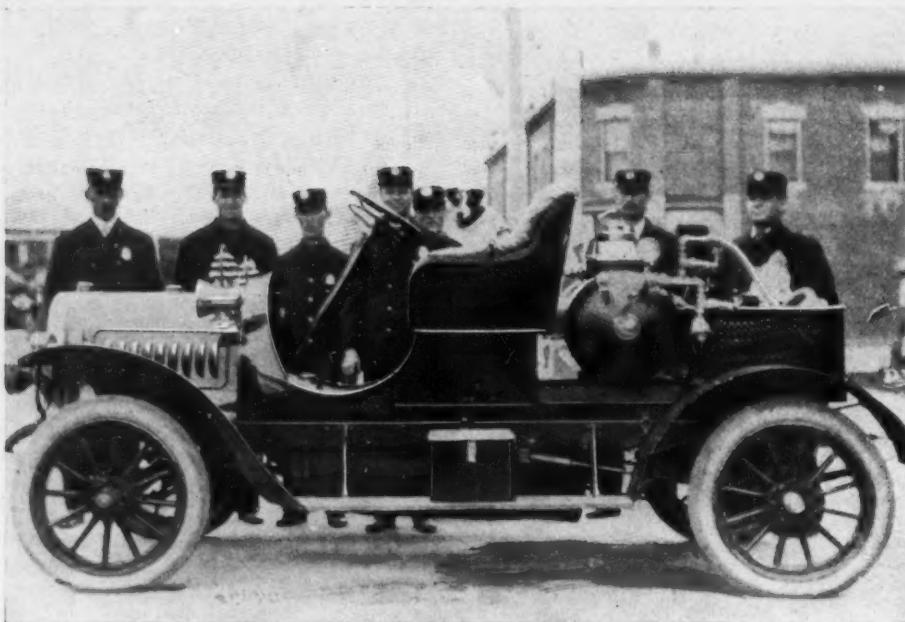
cases constitutes the leading character of class three, and as an example of this class the Mann steam wagon is cited.

On a succeeding page appear vertical and plan diagrams illustrating the general assembly of a steam wagon of the third class. In these illustrations the horizontal single or two-cylinder motor designated A is supported generally on one side of the car framework and mounted almost amidship. Its crankshaft is shown extended to one side carrying pinions B and C in mesh with gears E and D on the countershaft. Pinions B and E and D and C may be constantly in mesh and locked to their respective shafts through individual clutches so that for fast traveling drive would be through gears B-E and for hill-climbing through gears D-C. Transmission to the rear axle is through pinion F to spur gear H, the latter attached to the differential. In this third class of vehicles the accessibility of the motor is considered of prime importance and as seen in two of the styles of the Mann wagon illustrated, it is located well beneath the road-carrying platform, and accessible in that the entire top of the covering enclosing the motor is removable without disturbing the load on the machine. The Mann wagon illustrated in the heading is not of the enclosed type, although its motor is carried in front of the back axle and has connections therewith through a two-speed gearset and spur drive.

Closely following upon this resume of the three classes of steam wagons comes a bit of history occasioned by the stringent motor car acts of Great Britain. According to these acts the weight of a steam machine was limited to 3 tons. Many builders found it exceedingly difficult to manufacture a machine of this weight and capable of carrying a 3 to 5-ton load such as the buying public demanded. The trouble with machines not exceeding the



MANN 5-TON STEAM WAGON WITH TWO CYLINDER HORIZONTAL ENGINE CARRIED IN FRONT OF BACK AXLE



RAMBLER CAR CONVERTED INTO FIRST-AID WAGON

3-ton limit was that sufficient material could not be placed in the road wheels, springs could not be made of sufficient length to reduce the vibration, the bearing surfaces were often undersize and many other portions of the car were sacrificed in order to weigh in at the 3-ton mark. Recently, however, this 3-ton weight limit has been increased to 5 tons, making it possible for the many manufacturers of steam cars to incorporate in their design the requisite amount of bearing surface, road wheel width, spring length, etc. Under the old order the Mann people constructed some 300 machines, all of which are in use, some concerns having operated five or six of them over a period of the same number of years.

Mann cars manufactured by Mann's Patent Steam Cart and Wagon Co., Leeds, Eng., are built in four sizes to carry 2, 3, 5 and 7 tons respectively. All are fitted with short loco type boilers mounted over the front axle and extending slightly to the rear of it. As prevention against explosion each boiler carries a fusible plug A located in the highest internal part of the boiler so as to secure its being melted out before any damage is done to other portions of the boiler. In other words there are no combustion chambers or tubes standing above the firebox top that can become damaged through scarcity of water before the plug A is melted out. The Mann boilers are about one-third the length of a boiler used in an ordinary traction engine so on steep hills there is no danger of the tube being out of water or there is no danger when descending hills of the firebox being uncovered. Should a driver be so careless as to allow the fusible plug A melting out and the fire becoming extinguished, he has the trouble of putting in a new plug and refilling the boiler—which is the punishment for his neglected duty. The boiler is made with a large

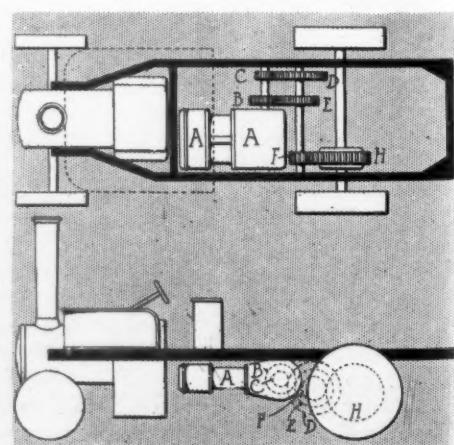
water line area for the gentle production of steam and also to eliminate rapid fluctuation of the water levels in the boiler. It is made with a large manhole B on top and has ample mud doors to facilitate cleaning and examination. The firebox C is conveniently placed for firing as well as being carried on a level with the fuel bunker. The grate can be clinkered without dropping the bars and allowing a rush of cold air to enter.

In a review of the Mann engine particular attention is called to the enclosing of all working parts and to their being operated in oil, a construction which, according to general experiments, has resulted in great economy as well as adding life to the machine. The engine is of the compound two-cylinder style fitted with slide valves so as to avoid waste of steam as frequently encountered with piston valves. The Mann company has used for 10 years a patent reversing gear which requires a single eccentric instead of the ordinary link motion. The revolving parts of the motor are made of the same grade of metal as used in common motor car practice and bronze bearings are generally fitted. For use on very short hills an auxiliary or pop valve is used by which high-pressure steam is admitted to the low-pressure cylinder, but for general traveling the high-pressure steam is admitted to the high-pressure cylinder from which it in turn passes to the low-pressure cylinder. All forgings in use are subject to tensile and other tests before placed in the car. The crankshaft is cut from a solid block, the crank throws are balanced in every particular and a medium-diameter flywheel is fitted to give smoother running at low speeds. As in many motors of this kind the stroke is considerably longer than the bore.

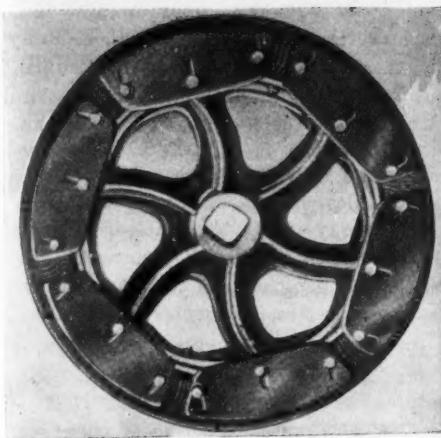
In the transmission system in addition to the running of all gears in oils the tendency of the Mann people is to fit all gears

on squared shafts instead of by keys and to use bronze throughout for bearing bushes. The wheel problem, although wrestled with for several years, still is an unknown quantity although the practice is to use metal wheels instead of wood as with the latter trouble arises in keeping the metal tire shrunk on firmly all the time. On trailers the shrunk tire gives good service but on the driving wheels it endures but a short time before working loose. Experiments and time have proven steel is superior to wood for tires on heavy steam vehicles, as it is not affected by weather, it wears longer and clips can be attached readily for traveling over soft roads or fields. The Mann people furnish a patented wood wheel for use when the ground is badly frozen or covered with snow. This wheel as illustrated consists of a cast-steel inner wheel with a polygonal rim to which are bolted hardwood blocks or segments with end-on grain. To prevent wood splitting, plate segments or clamps with slot holes in them, are bolted against the sides of the blocks and the rim of the inner cast steel wheel. The ends of the plate segments are a sufficient distance apart to allow them to be drawn toward the center of the wheel so that they will not come in contact with the road as the blocks are worn down, but by occasional adjustment they may be kept at suitable distance from the tread or outside of the wheel. These wheels, it is claimed, enable wagons to travel in snowy and frosty weather when the roads are impassable to ordinary steel tire wheels and when used in combination with a sanding box will climb very steep hills.

Featured in the Mann wagons for several seasons, in fact, since their inception, is a patented style of tipping body in which the body is fulcrumed near its center so the forward end can be raised and the rear lowered, thereby allowing of the road sliding out of the rear. The gear for this tipping purpose consists of a semi-crescent-shaped pin-rack attached at its upper end to the front of the box and at its lower end passing through a bracket which constantly keeps it in mesh with a



STEAM CHASSIS, CLASS THREE



MANN WINTER WHEEL

ing and hand wheel the box is raised readily as shown in one of the illustrations. The fulcrum is such as to tip a full load easily and the control is such that tipping can be continued to any desired angle without danger of it passing this and getting beyond the control of the driver. The pin-rack consists of a couple of parallel strips connected by a series of pins with which the gear meshes. The Mann company has gone extensively into the automatic unloading system having brought out several years ago what it calls its tilting cart, which differs from the vehicles illustrated in that it is much shorter and in that the load-carrying part is a hopper device pivoted on the axle and capable of being tilted back as desired. The company also has several styles of compartment wagons for hauling coal or other material. These wagons consist of from two to six or more compartments, so arranged that one can be emptied without disturbing the others. In emptying one or all a series of dropping side and floor doors is used, permitting of unloading coal at from two to six different places without the driver having to use a shovel. A still further step in the tilting business is that used on the company's municipal scavenging wagons in which the entire body, carried slightly higher than the rear wheels and supplied with hinged doors at either side, can be tilted sidewise to the right or left at an angle of 45 degrees, sufficient to empty the complete load.

In its steering gear the old form of pivoted axle is followed but the front half-elliptic spring is thrown beneath the axle instead of above it, thereby accomplishing a lower center of gravity. The front of the car is pivoted in the center of the axle so should one wheel pass over an obstruction the equilibrium of the machine is not interfered with. This axle is used for steering purposes through a worm and quadrant gearing connected with an inclined steering column. For use on very muddy roads and other slippery places a differential lock is provided by means of which the action of the differential is cut out, thus insuring equal gripping of both rear wheels. This differential lock is noth-

ing more than a friction band controlled by the driver. Should the car get stuck with one wheel in a slippery place it is possible by locking the differential to cause the other wheel to pull the load. In all cases brakes are of the surface style acting directly on tires of the rear wheels.

A few facts relative to the performance of these machines will not be amiss. After running one car for 21 months the owner estimated he had covered 14,000 miles and his repair bill for that time was exactly \$125. Another wagon in a 4-year period traveled 11,522 miles without a mishap of any nature, its total loads for that time being 19,036½ tons. A third owner with his wagon in constant use for 3 years had a total repair bill of \$280, which is an average of \$93 per year. In another case one of the wagons during 18 months' service had a \$25 repair bill. Many other cases might be cited but it is not necessary, these showing conclusively the relative amount of repairs.

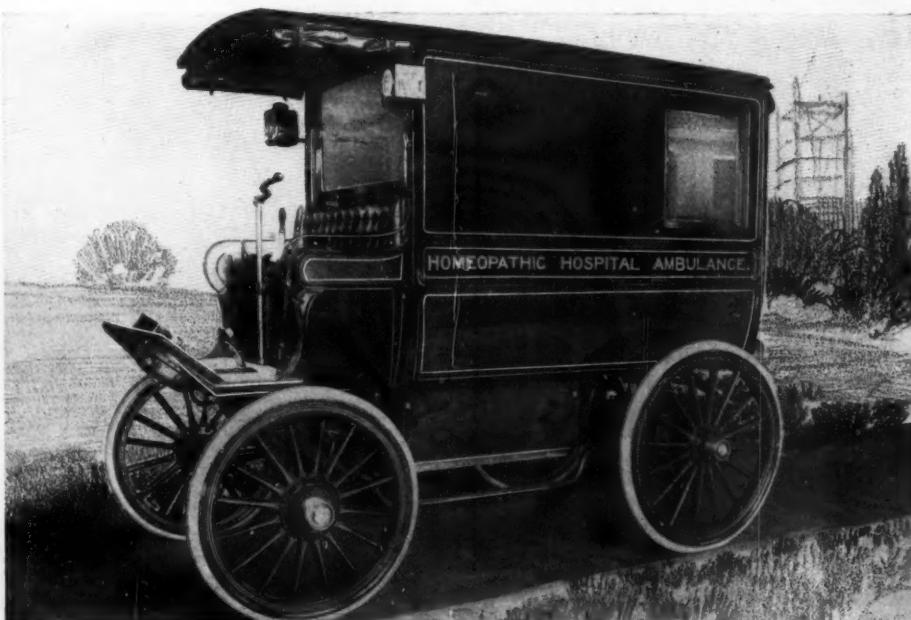
#### HOSPITAL USES AN ELECTRIC

The homeopathic hospital of Springfield, Mass., an institution just completed, has purchased for general hospital service a Riker electric ambulance. In general appearance the vehicle closely resembles the conventional horse-drawn affair. The wheelbase is 84 inches and the tread 63 inches. The front wheels are 38 inches in diameter while the rear ones are 42 inches, all being of wood. Solid rubber tires are used. An underslung battery of forty cells supplies current for the two motors which operate individually with each rear wheel. The radius of action is 30 miles per charge at a maximum speed of 15 miles per hour. The interior is illuminated by ceiling electric lights while side electric lights are located above the driver's seat. A portable electric light is supplied for surgeon's use. An 11-inch repeating gong affords ample warning of approach. The

steering handle is secured to a vertical center pillar. The car is steered from the left-hand side. There are two sets of brakes, one of which is worked by a hand lever actuating shoes upon the tire surfaces. There is complete outfit, such as stretchers and the like. Accommodations are provided for operator and two attendants besides the patient. There are large plate-glass windows at the rear of each side panel and at the front end of the vehicle in back of the driver's seat. The platform dimensions are 10 feet 7½ inches by 4 feet 2 inches.

#### RAMBLER AS A FIRST AID

Long Beach, Cal., being in need of a first-aid chemical wagon of the horse-driven or motor-driven type, pressed a model 21 Rambler into use by removing the detachable tonneau and mounting the chemical tank and hose reel on the exposed platform. The tank rests crosswise behind the front seat and the wire screen box for carrying the hose is immediately in the rear of this. The car was put to some good tests in comparison with horse-drawn chemical wagons. One example of this was a three-quarter-mile run over rough streets and across several street car tracks. So far the average time from the first tap of the alarm until the fire has been reached is 2 minutes, the motor, of course, being idle when the alarm was received. The added chemical equipment weighs 1,000 pounds and necessitates carrying two additional men. A point of interest is that the chemical part was not attached by the Rambler people but by the fire department force of Long Beach. In changing the Rambler into its fire-fighting garb, the chassis part remained as it was, in fact the running boards and fenders not being removed, and the pneumatic tires left in position. The accommodation for the extra men is not the best, in that they must sit on the rear platform.



RIKER ELECTRIC IN SPRINGFIELD HOSPITAL SERVICE



MAXWELL TOURING PARTY AT CROTON DAM, IN WESTCHESTER COUNTY, N. Y.

**Butler To Go in Glidden**—L. B. Butler, of Boston, the New England representative of the Pierce-Racine car, expects to be a competitor in the Glidden tour this year. He will drive one of the two Pierce-Racines that are to be entered for the trophy.

**Buffalo Bill in a Motor Car**—Buffalo Bill is becoming interested in motor cars, and a recent photograph shows Colonel Cody in a two-cycle Atlas runabout. It looks as if the mustang was doomed and the Deadwood stage coach holdups and rescues would eventually be made from the up-to-date methods of conveyance.

**Going After the Doctors**—During the annual convention of the American Medical Association at Atlantic City June 4, 5, 6 and 7 the Autocar Co. of Ardmore will conduct on Young's pier an exhibition of its vehicles suitable for physicians' use, and will give demonstration of the car's merits to the disciples of Aesculapius at any time during the 4 days.

**Denver Up to Date**—The importance of the motor car has impressed itself on the city authorities of Denver. The fire and police board has purchased a Premier runabout for the chief of the fire department, Terry Owens, and the board of public works has bought a Stoddard-Dayton touring car to be used jointly by the officers of its department and the mayor.

**Bisons Will Fight**—Saturday was the last day for the payment of the vehicle tax levied on motor cars in Buffalo. Many owners have refused to pay this tax and the Automobile Club of Buffalo has opposed the ordinance from the first. "We do not intend paying the tax unless the courts compel us to do so," was the sentiment expressed by Secretary Dai H. Lewis of the club. "We intend to let the city take the initiative. The city can select any member it sees fit and make an arrest. That will start the fight. We are not particular when the battle begins." The

Automobile Club of Buffalo has retained former Supreme Court Justice Daniel J. Kenefick to see it through in its contention that the new ordinance is illegal and unenforceable. Judge Kenefick has given his opinion that the law will not stand.

**Crosses the Alps**—Calvin S. Smith of Chicago, who is touring Europe in an Apperson, writes Motor Age he finished crossing the Alps May 21. He reached an elevation of 10,800 feet above the sea level. "I found it extremely cold," he writes. "Plowing through the snow one feels how really dependent he is on his motor car. The Automobile Club of Italy has put up shelter huts for motorists in case of accident. I did not use one but I do not care to cross the Alps again."

**Climb Up Mount Wilson**—The road up Mount Wilson, the top of which is 6,660 feet above the sea level, was opened recently and the next day three cars climbed the perilous trail. L. L. Whitman in a 12-



MARK TWAIN IN A DRAGON

horsepower Franklin, went up first in 3 hours, feeling his way. Then E. L. Braly and three others in a one-cylinder Cadillac, did 2 hours 10 minutes, while the third ascent was made by Dunstan Collins and J. E. Jennings in a 1905 22-horsepower Buick in 1 hour 55 minutes. The distance is 10 miles and in no place is there a straightaway more than 100 feet long. Several times the Buick men were near death. So dangerous is the trip that the road now is closed to motor cars.

**Hoosier Celebration Planned**—Rather a unique celebration is being planned for July 4 at Winona Lake, Ind. It is planned to have a gathering of motor car owners and editors and each owner will take one editor and the latter's wife to the lake. During the day there will be a number of interesting contests, although no racing will be indulged in. One of the principal features will be a motor parade along the lake, with prizes for the best-decorated cars. South Bend, Auburn, Fort Wayne and other nearby cities have signified their intention of sending representatives to the celebration.

**Motor Record of Denverite**—George H. Campbell, a Denver merchant, has returned from a 10 months' trip over Europe, which he toured with his family to the extent of nearly 20,000 miles in a 1905 Locomobile. Previous to going to Europe he had 20,000 miles in this country with it. With all this traveling he still has one pair of the original Diamond tires. They are on the left rear and right front wheels. In Europe he bought a second pair of Continentals. The general excellence of the foreign roads made it possible for Mr. Campbell to pull through with a motor car upkeep expense of something less than \$50 a month, and of this the fuel item was the greatest, for gasoline there costs all the way from 50 cents to \$1.75 per gallon.

**After the Toll Roads**—The Grand Rapids Automobile Club will take up the toll road proposition. In almost every direction running out of Grand Rapids the motorists are held up and made to pay toll to the company which is supposed to be keeping up a decent highway. The little city of Paw Paw has not a toll road leading into it, yet it is credited with the best avenues of approach of probably any city in Michigan. To get rid of the toll roads about Grand Rapids will be one of the aims of the Grand Rapids club. Another important matter which will be cared for by Alderman Saunders of the Tenth ward is the habit of persons, children for the most part, in certain sections of the city throwing glass and tacks into the streets with the purpose of hearing the motor tires blow up. The city ordinance is hard to enforce owing to the difficulty in securing the evidence against who threw the tacks into the street. Alderman Saunders

TUBES.	
Material	Iron
Wire Gauge	No. 11
Number	314
Diameter	2 1/4 ins.
Length	20 ft.
HEATING SURFACE.	
Fire box	195 sq. ft.
Tubes	3683 sq. ft.
Total	3878 sq. ft.
Grate area	54.25 sq. ft.
DRIVING WHEELS.	
Diameter, over tires	72 1/2 ins.
Diameter, wheel centers	66 ins.
Journals, main, diameter and length	10 in. x 12 in.
Journals, others, diameter and length	9 in. x 12 in.
WHEEL BASE.	
Driving	12 ft., 6 in.
Total engine	31 ft., 4 1/2 in.
Total engine and tender	63 ft., 0 1/2 in.
WEIGHT.	
On driving wheels	138,460 lbs.
On engine truck	39,700 lbs.
On trailing truck	42,300 lbs.
Total engine	220,460 lbs.
Total engine and tender	358,000 lbs.

### Portable Crank Pin Turning Machine

**I**NASMUCH as the outside end of a locomotive crank pin, from which projects the gudgeon screw, never becomes altered in shape, it follows that if a machine of a suitable character be attached to the screw, and facing against the end just referred to, the surface of the crank pin, which through use has become altered in form can be easily restored to its original shape and quarter.

The accompanying illustration shows such a machine attached to the pin and ready for operation. The manner in which this machine performs the work is as follows:

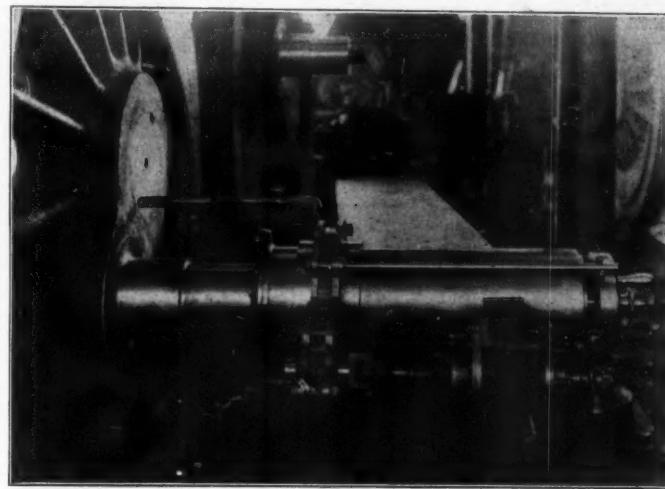
After screwing the machine firmly to the end of the crank pin by means of the two handles, the latter are removed and the sliding sleeve is placed on the barrel. Attached to this sleeve are four lugs, containing the necessary tools for roughing, finishing, and filleting the crank pin. The tools are  $5/8$  in. round high speed steel. The gear wheel and casing are then slipped over the two feather keys, when by means of an air motor the sleeve is caused to revolve around the crank pin.

The forward or feeding motion of the sleeve is accomplished through mechanism contained in a hand wheel which feeding is either automatic in character, or the result of hand labor according as the gearing is engaged or disengaged. It is not necessary to stop the motor to perform this last action. Provision has been made for any lost motion accruing from ordinary wear and tear of the barrel and sleeve, by adjusting rings, which are screwed against taper split bushings on each.

The machine consists of four parts, no one of which is too heavy to be handled by even a boy. This crank pin turner can be adjusted to any pin having a threaded

end by simply making a face plate to suit the pin, and the largest locomotive crank pin can be restored to its original shape in three hours. A great saving of time being thus effected, as compared with the practice generally in vogue of removing or filing the pin.

It can be used in any round house without removing the wheels from the engine, and is successfully operated

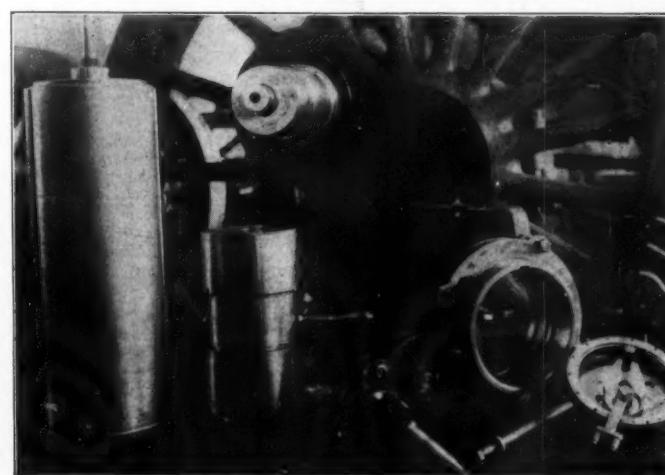


PORTABLE CRANK PIN TURNING MACHINE IN POSITION FOR BEGINNING CUT—GRAND TRUNK RY.

with 70 pounds air pressure through a "Little Giant" air motor.

As a result of several years' observation, it has been ascertained, that providing the main pins are maintained in a "true" condition, these in the front and back wheels require little or no attention. The number of rod breakages will materially be lessened, and the brasses will give a far greater mileage.

Several of these machines are in use by the Grand Trunk Railway Company, having displaced various



VARIOUS PARTS OF THE PORTABLE CRANK PIN TURNING MACHINE—GRAND TRUNK RY.

other makes. They were developed by Mr. M. H. Westbrook, machine shop foreman at Port Huron, Mich., to whom we are indebted for the illustrations presented.